```
File 275:Gale Group Computer DB(TM) 1983-2004/Feb 06
         (c) 2004 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2004/Feb 06
         (c) 2004 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2004/Feb 06
         (c) 2004 The Gale Group
File  16:Gale Group PROMT(R) 1990-2004/Feb 06
         (c) 2004 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2004/Feb 06
         (c)2004 The Gale Group
File 624:McGraw-Hill Publications 1985-2004/Feb 05
         (c) 2004 McGraw-Hill Co. Inc
File  15:ABI/Inform(R) 1971-2004/Feb 06
         (c) 2004 ProQuest Info&Learning
File 647:CMP  Computer Fulltext 1988-2004/Jan W4
         (c) 2004 CMP Media, LLC
File 674:Computer News Fulltext 1989-2004/Jan W4
         (c) 2004 IDG Communications
File 696:DIALOG Telecom. Newsletters 1995-2004/Feb 05
         (c) 2004 The Dialog Corp.
File 369:New Scientist 1994-2004/Feb W1
         (c) 2004 Reed Business Information Ltd.

Set     Items   Description
S1    5013823   EXPRESSION? ? OR FUNCTION? ? OR STRING? ? OR (SEQUENCE? ? -
             OR SERIES)(3N)(CHARACTER? ? OR LETTER? ? OR NUMBER? ? OR WORD?
              ? OR KEYWORD? ? OR TERM? ? OR TERMINOLOGY) OR PHRASE? ? OR S-
             ENTENCE? ? OR STATEMENT? ?
S2      38872   (REPLAC? OR SUBSTITUT? OR SWAP????)(5N)(S1 OR CHARACTER? ?
             OR VARIABLE? ? OR PARAMETER? ? OR OPERATOR? ? OR OPERAND? ? OR
              DELIMITER? ? OR SUBSTRING? ?)
S3     238766   (TRANSLAT? OR TRANSFORM? OR CONVERT? OR CONVERSION OR CHAN-
             G? OR REFORMAT? OR RE()FORMAT?)(5N)(S1 OR CHARACTER? ? OR VAR-
             IABLE? ? OR PARAMETER? ? OR OPERATOR? ? OR OPERAND? ? OR DELI-
             MITER? ? OR SUBSTRING? ?)
S4     746803   ITERAT? OR REITERAT? OR REPEAT?
S5     393903   (REDUC? OR SHRINK??? OR SHRUNK OR CONDENS? OR CONTRACT? OR
             COMPACT? OR COMPRESSED OR COMPRESSION OR MINIMIZ? OR MINIMIS?-
             )(10N)(S1 OR CHARACTER? ? OR VARIABLE? ? OR PARAMETER? ? OR O-
             PERATOR? ? OR OPERAND? ? OR DELIMITER? ? OR SUBSTRING? ?)
S6         138   S1(20N)S2:S3(20N)S4(20N)S5
S7         118   RD (unique items)
S8         101   S7 NOT PD>19991201
S9          79   S1(30N)S2(30N)S4(30N)S5
S10         67   RD (unique items)
S11         61   S10 NOT PD>19991201
```

11/9/56 (Item 5 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00635561 92-50501

Associative-Commutative Reduction Orderings

Bachmair, Leo

Information Processing Letters v43n1 PP: 21-27 Aug 10, 1992 CODEN: IFPLAT ISSN: 0020-0190 JRNL CODE: IPL
DOC TYPE: Journal article LANGUAGE: English LENGTH: 7 Pages
SPECIAL FEATURE: Diagrams Equations References

ABSTRACT: Rewrite systems are sets of directed equations used to compute by **repeatedly replacing** subterms in a given **expression** by equal terms until a simplest form possible (a normal form) is obtained. If a rewrite system is terminating, that is, allows no infinite sequence of rewrites, then every **expression** has a normal form. A variety of orderings, called **reduction** orderings, have been designed for proving termination, but most of them are not applicable to extended rewrite systems, where rewrites take into account such properties of **functions** as associativity and commutativity. The analysis shows how an ordering represented as a schematic rewrite system - the lexicographic path ordering - can be systematically modified into an ordering compatible with associativity and commutativity. This approach can be applied to theories other than associativity and commutativity and to orderings other than the lexicographic path ordering.

DESCRIPTORS: Theory; Information processing; Functions; Mathematical models
CLASSIFICATION CODES: 5240 (CN=Software & systems); 9130 (CN=Experimental/Theoretical)

11/3,K/1 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

02192406 SUPPLIER NUMBER: 19758646 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Working within the system. (fine-tuning algorithms) (Technology Tutorial)
Bentley, Jon
UNIX Review, v15, n11, p71(6)
Oct, 1997
ISSN: 0742-3136 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2570 LINE COUNT: 00228

... of programs shown in Figure 2. The main branch is the sequence is0, is1, is2, is3, is4; we will also follow a few side branches. **Function** is1, for instance, adds register declarations to **function** is1:
(Figure 2 ILLUSTRATION OMITTED)
register int i, j;
It makes little difference for optimizing compilers but (sometimes) makes a big difference without optimization.
Exercise...

...so far has been defined as i nt. What happens if we change it to f I o a t or some other type?
Moving **Swaps**
All previous **functions** sift the new element down by **repeated** swaps. We can **reduce** the work by storing that element in the **variable** t, sliding the intervening elements up, then assigning t to its proper final position:

```
void is2(int n)
{   int i, j;
    DType t;
    for (i...

...i++) {
        t = a(i);
        for (j = i ; j > 0 && t < a(j-1); j--)
            a(j) = a(j-1);
        a(j) = t;
        }
}
```

On all systems, **function** is2 is faster than both is0 and is 1.
We can reduce the overhead in the inner loop with the old trick of saving a...

11/3,K/2 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01924985 SUPPLIER NUMBER: 18204906 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Iterated's Fractal Image System For Web Graphics.
Newsbytes, pNEW04160005
April 16, 1996
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 556 LINE COUNT: 00045

Fractal compression uses a wholly different technique than conventional run length encoding (RLE) **compression** systems which **replace** **strings** of recurring or seven-bit **characters** with token eight-bit characters. By back-tracking mathematical calculations which would have resulted in a given image appearing on a segment of the screen, an image file can be **reduced** to a series of less data intensive fractal data **strings** .
Iterated has uploaded a shareware Fractal Imager for Web masters on its own World Wide Web site at http://www/ **iterated** .com . The idea is that Webmasters download the imager and try it out. If they like it, they pay to register their copy.
The imager takes a HTML (hypertext markup language) page and reduces

it down to a fractal set of data **strings** known as a fractal image file (FIF). Users of the Web site then use a FIF viewer such as Iterated's free Netscape 2.0...

11/3,K/3 **(Item 3 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01629704 SUPPLIER NUMBER: 17285151 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Maximizing the benefits of data compression.
Moore, Reggie
Enterprise Systems Journal, v10, n7, p54(3)
July, 1995
ISSN: 1053-6566 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2298 LINE COUNT: 00192

... data, custom Huffman generally tends to yield higher compression rates than static Huffman. Custom, however, has the administrative overhead of maintaining backups of the external **compression** tables.

The RLE algorithm is sometimes referred to as **repeating character** . This algorithm identifies **repeating** identical **characters** in the data, then **replaces** the original data with a single character symbol and a count field. The RLE algorithm tends to yield lower compression than Huffman, but it may be the appropriate algorithm for data containing many **strings** of **repeating** characters, e.g., text data.

The Lempel-Ziv algorithm mirrors Huffman, since both are table-driven techniques. The contents of a Lempel-Ziv table are bit- **string** patterns that are used to **replace** redundant **character strings** in the data. The most recent application of the Lempel-Ziv algorithm is the IBM announcement of hardware-assisted data compression in selected ES/9000...

11/3,K/4 **(Item 4 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01712948 SUPPLIER NUMBER: 15560343 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Microsoft's compression file format. (Tutorial) (Technical)
Davis, Pete
Windows-DOS Developer's Journal, v5, n7, p59(5)
July, 1994
DOCUMENT TYPE: Technical ISSN: 1059-2407 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2359 LINE COUNT: 00224

... The easiest way to understand the LZ77 algorithm is to view it as a fancier version of simple run-length encoding. Simple run-length encoding **replaces** strings of repeated characters with a single character and a count. For example, suppose you wanted to run-length encode the following string of ASCII...

...brackets to denote the decimal value of a single ASCII byte):
a[4]b[4]a[4]b[4]

For this input string, the algorithm **compressed** a 16-byte **string** into an 8-byte **string** . Of course, requiring every other **character** to contain a repetition count means that some **strings** will actually get bigger when **compressed** . For example, this **string** : abcdabcd would be twice as large: a[0]b[0]c[0]d[0]a[0]b[0]c[0]d[0]

Run-length encoding...

...to look for repeated strings, rather than just repeated instances of a single character? For example, the input string above contains a repetition of the **string** "abcd". You could **replace** the second occurrence of this **string** with two numbers, the offset and length of the string in the uncompressed string to repeat. Ignoring the problem of how to distinguish offset/length...

...to a string like this: abcd[0,4]
This is the basic idea of LZ77 compression. Instead of storing a repetition count for a single **character** , the **compression** software stores the offset and length of a **string** of **characters** that is repeated.
I said that LZ77 is a dictionary-based sliding window algorithm. "Dictionary-based" means that the **compression** algorithm creates a list of the strings or symbols that it has discovered are repeated in the input. The compressor is typically much more complex...

...be huge, so each offset could require as much as four bytes (assuming your maximum file is 4 gigabytes). Instead, LZ77 limits itself to repeating **strings** that have occurred within a fixed window behind the current character in the decompressed output stream. compress.exe uses a sliding window size of 4096...

11/3,K/5 (Item 5 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01676047 SUPPLIER NUMBER: 15089751 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Record-oriented data compression. (developing a record-oriented data compression routine using the Huffman algorithm) (includes related article on the Lempel-Ziv-Welch and Huffman algorithms) (Tutorial)
Ross, John W.
C Users Journal, v12, n4, p83(8)
April, 1994
DOCUMENT TYPE: Tutorial ISSN: 0898-9788 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 3174 LINE COUNT: 00258

... tree from the probability information. This tree must be available in both the compression and decompression phases. Though the output consists of variable-length bit **strings** for each character, no end-of-character markers are required -- the alogrithm "knows" when it has reached the end of a code in the decompression...

...generally produces better compression ratios but it is not suitable for record-oriented compression. The records involved may be quite short and may contain no **repeated strings** . Since the records may be processed independently (for example, inserting one record at random into a data base) LZW can't take advantage of the fact that the data base or file as a whole may have much **repeated** information in it. Since the LZW algorithm works by **replacing repeated strings** with shorter codes it would often provide unsatisfactory **compression** in this application.
Huffman encoding will work with individual records, but it's not without drawbacks. First, Huffman encoding requires an encoding tree be available...

11/3,K/6 (Item 6 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01627578 SUPPLIER NUMBER: 14625183 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Data compression: making something out of nothing. (What's the Code?) (run-length encoding, Huffman coding, Ziv-Lempel compression) (Technical) (Tutorial)
Stafford, David
Computer Shopper, v13, n12, p645(5)
Dec, 1993
DOCUMENT TYPE: Tutorial ISSN: 0886-0556 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2459 LINE COUNT: 00182

The benefit: Data that can be predicted in advance or that **repeats** previous data requires less storage. The trick is in how you go about doing

it, and as you will learn, there is no shortage of...

...which they were discovered.
Run-Length Encoding
Possibly the oldest data compression technique is run-length encoding (RLE). The idea behind RLE is to identify **repeated** "runs" of single **characters** and encode them in a more **compact** form. Black-and-white bitmap images such as those used for fonts, and database files of fixed-length records are typically excellent candidates for RLE...

...to serve as an "escape" command code that identifies a run. The catch is that the escape code must also be able to identify the **character** it **replaces** . You don't want to mistake a real character for an escape code!
The idea is exactly the same as the familiar backslash escape character in C **strings** , which must be able to encode a variety of special characters as well as the backslash itself. Some convention has to be chosen to make...

11/3,K/7 (Item 7 from file: 275)
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01617614 SUPPLIER NUMBER: 14357782 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Double your RAM drive with DoubleSpace. (Hot Tips)(Tutorial) (Tutorial)
Rorhbough, Linda
PC-Computing, v6, n10, p301(1)
Oct, 1993
DOCUMENT TYPE: Tutorial ISSN: 0899-1847 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 457 LINE COUNT: 00034

... made the changes to CONFIG.SYS, reboot your computer. DOS will create a RAM drive using your systems first available drive letter. To create a **compressed** RAM drive, type the following **statement** at a command line, **replacing** D: with your RAM drives letter:
DBLSPACE /CR D:
DoubleSpace creates a compressed drive using your RAM drive as the host, simultaneously telling you which...

...its done, adjust the size of the compressed drive. At a command line, type DBLSPACE /SIZE=1000 G: (G: is the drive letter of your **compressed** RAM drive). DoubleSpace responds with a **statement** that the size youve specified (1,000MB) is too large and tells you the maximum and minimum permissible sizes. To make the DoubleSpace drive as large as possible, **repeat** the /SIZE command using the maximum allowable size. For example, if DoubleSpace lists the largest possible size for drive G: as 2.49MB, type the...

11/3,K/8 (Item 8 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01594509 SUPPLIER NUMBER: 13713945 (USE FORMAT 7 OR 9 FOR FULL TEXT)
MS-DOS questions & answers. (Column)
Prosise, Jeff
Microsoft Systems Journal, v8, n5, p80(4)
May, 1993
DOCUMENT TYPE: Column ISSN: 0889-9932 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 2229 LINE COUNT: 00167

... stark black and white screen that displays messages from DBLSPACE) but it works. The "DoubleSpace System API Specification" contains the information you need to identify **compressed** drives.
DoubleSpace uses a form of Lempel-Ziv **compression** , which encodes data by **replacing repeating phrases** (**character sequences**) with

tokens that identify the location and length of earlier occurrences of the same **phrase** . The **compression** algorithm uses a 4KB window into previously seen data as the dictionary. The window's starting offset from the beginning of the data stream is...

11/3,K/9 (Item 9 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01559083 SUPPLIER NUMBER: 13503014
Data compression eases federal storage, networking problems.
Lazar, Jerry
Federal Computer Week, v7, n4, p24(3)
Feb 15, 1993
ISSN: 0893-052X LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

...ABSTRACT: compression is being used to reduce the size of files requiring storage and transmission. The technology is embedded in either hardware or software products. Data **compression** usually works by **replacing** a **repeated string** of data with a single symbol, called a token. Data transmission bandwidth constraints are a major driving force behind the implementation of data compression technology...

11/3,K/10 (Item 10 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01145779 SUPPLIER NUMBER: 12861981 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Colour scanners. (evaluations of AVR 3000/CL Plus, Epson GT-6000, HP ScanJet IIc, SIIG AV800, UMAX UC630 and XRS OmniMedia 6c) (Hardware Review) (PC User NTSL Lab Report) (Evaluation)
PC User, n195, p126(15)
Oct 7, 1992
DOCUMENT TYPE: Evaluation ISSN: 0263-5720 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 6834 LINE COUNT: 00553

... image means that the software processes all 14.5Mb of data. Image file compression software, while handy, can cause image degradation. Unlike text or binary **compression** that compresses files by **replacing repeating strings** with shorthand libraries, image **compression** software removes data. The Joint Photographic Experts Group (JPEG) compression algorithm compresses images by looking for data that can be removed without noticeably harming the...

11/3,K/11 (Item 11 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01544803 SUPPLIER NUMBER: 12748898 (USE FORMAT 7 OR 9 FOR FULL TEXT)
24-bit color scanners. (includes related pricing on product summaries, pricing and the highest recommended product) (Hardware Review) (Evaluation)
Froning, Andrew
Computing Canada, v18, n21, p28(2)
Oct 13, 1992
DOCUMENT TYPE: Evaluation ISSN: 0319-0161 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2291 LINE COUNT: 00191

... means that the software processes all 14.5 MB of data. Image file compression software, while handy, can cause image degradation.
Unlike text or binary **compression** that compresses files by **replacing repeating strings** with shorthand libraries, image **compression** software removes data.

The Joint Photographic Experts Group (JPEG) compression algorithm compresses images by looking for data that can be removed without noticeably harming the...

11/3,K/12 (Item 12 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01530961 SUPPLIER NUMBER: 12525399 (USE FORMAT 7 OR 9 FOR FULL TEXT)
A practical algorithm for exact array dependence analysis. (Tutorial) (Cover Story)
Pugh, William
Communications of the ACM, v35, n8, p102(13)
August, 1992
DOCUMENT TYPE: Cover Story ISSN: 0001-0782 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 9764 LINE COUNT: 00769

... mod as follows:

a mod b = a - b [unkeyable]a/b + 1/2[unkeyable]

We create a new variable 0 and produce the constraint: [Mathematical **Expression** Omitted] Note that [a.sub.k] mod m = - sign([a.sub.k]). We then solve this constraint for [x.sub.k] [x.sub.k] = -sign([a.sub.k])m [unkeyable] [Mathematical **Expression** Omitted] and **substitute** the result in all constraints. In the original constraint, this **substitution** produces: [Mathematical **Expression** Omitted] Since }[a.sub.k]}=m - 1, this is equal to [Mathematical **Expression** Omitted] [Mathematical **Expression** Omitted] Since all terms are now divisible by m, normalizing the constraint produces: [Mathematical **Expression** Omitted] [Mathematical **Expression** Omitted]

In the original constraint, the absolute value of the coefficient of 0 is the same as the absolute value of the original coefficient of [x.sub.k.] For all other **variables** , the absolute value of coefficients are **reduced** to at most two-thirds of their previous value. Therefore, **repeated** applications of this rule will eventually force a unit coefficient to appear and allow us to eliminate the constraint. An application of these methods is...

11/3,K/13 (Item 13 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01518273 SUPPLIER NUMBER: 12226136 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Register reassociation in PA-RISC compilers. (Hewlett-Packard Co.'s Precision Architecture-Reduced Instruction Set Computer architecture) (Technical)
Santhanam, Vatsa
Hewlett-Packard Journal, v43, n3, p33(6)
June, 1992
DOCUMENT TYPE: Technical ISSN: 0018-1153 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 3683 LINE COUNT: 00309

... This temporary variable is used in the calculation of the address of A(i,j,k). By incrementing the temporary variable by 20 on each **iteration** of the innermost loop, the multiplication of k by 20 is rendered useless, and therefore removed.

Linear **Function** Test **Replacement** . After strength- **reducing** k x 20, the only other real use of the **variable** k is to check for the loop termination condition (line 15). Through an optimization known as linear **function** lest **replacement** , (2,3) the use of the variable k in the innermost loop termination cheek is replaced by a comparison of the temporary variable t<k...

11/3,K/14 (Item 14 from file: 275)

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01104635 SUPPLIER NUMBER: 11976470 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Lossless data compression: file compression software transparently compresses and decompresses data every time you save, copy, or move a file. (How It Works)
Smith, Gina
PC-Computing, v5, n4, p258(2)
April, 1992
ISSN: 0899-1847 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 466 LINE COUNT: 00034

... to disk. The first time the word the goes through, for instance, the compression utility will send through the five characters that make up the **string** (the opening space, three letters, and then the final space).
3 As with a regular File Save procedure, DOS checks your file allocation table (FAT...

...into logical sector numbers that the ROM BIOS will recognize, and the ROM BIOS begins to write the data to the disk.
4 When the **compression** device driver sees a **repeated** instance of a **character string** , it creates a two-part code to send to the disk in its place. This code (also called a token) bas two parts: The first...
...the byte offset between this instance of the word and the first instance-a kind of pointer'; the second indicates the length of the byte **string** . The token **replacing** the word's much shorter than the word itself. The word the, for instance, comprises 40 bits-that's 5 bytes. The token replacing it...

11/3,K/15 **(Item 15 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01383276 SUPPLIER NUMBER: 09536641 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Modems: a modem transfers written information quickly and accurately down a telephone line. (tutorial)
Bidmead, Chris
Which Computer?, v13, n10, p120(1)
Oct, 1990
DOCUMENT TYPE: tutorial ISSN: 0140-3435 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1024 LINE COUNT: 00078

... to be defined as a pair of codes, one indicating the character, the other a number signifying how many times the character is to be **repeated** .
Using this technique a line of 70 spaces is reduced to the code for 70 followed by the code for space. More complex **compression** techniques look for **repeated sequences** of different **characters** , **substituting** short form codes for them. Powerful processors in the modems at each end, able to carry out the compression and decompression in real time, mean...

11/3,K/16 **(Item 16 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01106538 SUPPLIER NUMBER: 09475551 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The network goes digital. (includes a related article on null suppression)
Interconnect, v8, n10, pS6(1)
Oct, 1990
ISSN: 0740-9354 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 414 LINE COUNT: 00032

... SUPPRESSION
How does data compression work? Here's one simple technique cared null suppression.

Null suppression is a technique that scans a data stream for **repeated** blanks (called nulls). When the system finds some blanks, it **replaces** them with a **compression** indicator **character** " and a second **character** to indicate the number of null characters.

The receiver watches for this two- **character sequence** and **replaces** it with the correct number of nulls.

This technique is used in IBM's 3780 Bisync protocol.

11/3,K/17 **(Item 17 from file: 275)**
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01316530 SUPPLIER NUMBER: 07887680 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Compress and expand the files on your hard disk automatically. (Utilities)(two type-in programs) (column)
Greenberg, Ross M.
PC Magazine, v8, n21, p299(12)
Dec 12, 1989
DOCUMENT TYPE: column ISSN: 0888-8507 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 6892 LINE COUNT: 00510

... moment you call them. The compressed files take up less space--in effect giving you a larger hard disk--yet they remain immediately accessible.

All **compression** techniques work by **replacing** repeated **sequences** of **characters** ; using one code to represent many **characters** is the secret of **compression** routines. Fortunately, spreadsheets, word processing files, database files, and many executable programs (those with .COM or .EXE extensions) contain many repetitive **strings** . In spreadsheet and database programs a great deal of empty space is represenetd by ASCII nulls, spaces, and zeros. Similarly, in many executable files, the empty space allocated for local storage and the ubiquitous "stack" usually consists of multiple ASCII nulls. Word processor files often contain repetitive **strings** : certain **words** and **letter sequences** are obviously very common, as are the multiple spaces used to justify text.

PCMANAGE and DCOMPRES make use of the Lempel-Ziv-Walsh (LZW) algorithm...

11/3,K/18 **(Item 18 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01253387 SUPPLIER NUMBER: 06917007 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Storage squeeze relief. (data compression vs. direct access storage devices)
Elliott, Thomas R.
Software Magazine, v8, n10, p71(3)
Aug, 1988
ISSN: 0897-8085 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1695 LINE COUNT: 00137

... required data goes up, and the need for actual I/Os goes down," he said.

PACKING IT IN

There are many different implementations of data **compression** , but they are all based on the same principle; bit **strings** representing characters or groups of characters can usually be represented by shorter bit **strings** . In order to decode or "expand" **compressed** data, it is necessary to retain the algorithm that produced the **compression** .

Character compression is probably thesimplest form of **compression** . In this technique, **repeated characters** like the blanks used to pad a fixed field record, are **replaced** with one instance of the **character** and a header indicating how many times it is **repeated** .

More complex processes can go beyond this degree of compression. Many of these are based on the Huffman Technique, a method of substitution

devised by...

...Land, Texas, and the Shrink Series from Sterling Software's Systems Software Marketing Division, Rancho Cordova, Calif., use variants of Huffman encoding.

In Huffman-based **compression** , a **variable** length bit **string** is assigned to represent characters or groups of characters in a given data [illegible]: the more frequently recurring the character, the shorter the bit **string** .

While allowing greater storage savings compared to simple character compression, the Huffman Technique and its variants carry a larger overhead cost. The number of CPU...

11/3,K/19 (Item 19 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01245848 SUPPLIER NUMBER: 06282622 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Extended BASIC or BASIC assembler? Speed up EBasic with assembler interfacing.
Fitch, Ron
DG Review, v8, n5, p19(2)
Jan, 1988
ISSN: 1050-9127 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1128 LINE COUNT: 00089

... by replacing a set of space compression/decompression routines. This brought about an approximately 20 percent improvement. Then, in studying their code, I noticed a **string** space truncation routine that looked like: 1200 FOR I= LEN(V$) TO 2 STEP -1 1220 IF V$(I) <>"" THEN GOTO 1280 1240 NEXT I 1280 V$ = V$(2,I)

The above lines seem innocuous, but are in fact quite deadly. Every **iteration** through the FOR/NEXT loop takes time, as does each of the string [illegible] computations. Statement 1280 in effect generates its own loop [illegible] FO...

...effect the truncation.

I replaced that code with an Assembler language routine that essentially performs the CST firmware instruction. The lines of BASIC code were **reduced** to: 1200 CALL 7,V$,2 and **statements** 1220, 1240 and 1280 were deleted.

Setting up a benchmark loop of 10,000 **iterations** , the above BASIC **statements** clocked out at 82 seconds. **Replacing** these **statements** with a call to Subroutine 7 **reduced** the execution to 7.25 seconds.

Our final **string** enhancement was to add a general purpose **string** movement routine. Overall, the induction of these **string** routines produced such astonishing results that an I/O bottleneck was created. Nevertheless, this multiuser environment is producing a lot more work per unit of...

11/3,K/20 (Item 20 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01243533 SUPPLIER NUMBER: 06317612 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Optical disks compete with videotape and magnetic storage media: part 1.
Urrows, Henry; Urrows, Elizabeth
Optical Information Systems, v8, n2, p54(10)
March-April, 1988
ISSN: 0886-5809 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 7191 LINE COUNT: 00565

... 1987 MIS Week, summarized the hardware-based data compression feature. Its run-length limited encoding scheme analyzes data in 1-Kbyte packets, checking for repetitive **character strings** . An identifier **replaces strings repeated** more than twice, removing the need to

iterate them in their entirety.

After that first stage of compression the Huffman algorithm, used for one-dimensional data **compression** in the CCITT Group III digital facsimile standard, assigns **characters** within a given set unique numbers of bits based on their frequency of use. The most often used **characters** receive fewer bits to **reduce** further the space needed for storing the dataset. In other words, this method uses variable length codes, assigning the shortest codes to the most frequent...

11/3,K/21 (Item 21 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01238059 SUPPLIER NUMBER: 06213388 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Some fundamental data-compression tools. (column)
Seymour, Jim
PC Week, v5, n5, p30(1)
Feb 2, 1988
DOCUMENT TYPE: column ISSN: 0740-1604 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 751 LINE COUNT: 00056

... of these programs.

Actually, understanding data compression isn't all that difficult. There are many different approaches. One kind of algorithm relies on run-length **compression** , so that if, say, your document consists of a **character repeated** 10 times, that **character** appears only once in a run-length- **compressed** file, followed by a couple of bytes indicating it's to be **repeated** 10 times when the file is uncompressed.

String compression looks for **repeated** use of long words, **phrases** or other **character strings** in your work, builds a table of them, then replaces each with a one- or two-byte look-up to that table. If, say, you've written a report on cardiopulmonary resuscitation, a **string - compressed** file would **replace** every occurrence of those words with a two-byte code, which, upon decompression, would look up what was supposed to be there and reinsert "cardiopulmonary...

11/3,K/22 (Item 22 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01235669 SUPPLIER NUMBER: 07253439
ADIC-2.C: a general-purpose optimization program suitable for integrated circuit design applications using the pseudo objective function substitution method (POSM).
Tan, Gen-Lin; Pan, Shao-Wei; Ku, Walter H.; Shey, An-Jui
IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, v7, n11, p1150(14)
Nov, 1988
ISSN: 0278-0070 LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

ABSTRACT: An unconstrained optimization algorithm, the pseudo objective **function substitution** method (POSM), is developed and implemented in the general-purpose Analysis and Design Program for Integrated Circuits (ADIC-2.C) to improve the efficiency and speed of integrated circuit design. POSM involves the generation of pseudo objective **functions** which approximate the **function** being modeled but in simpler form and without extensive computation. The algorithm is evaluated by several, common numerical and circuit design examples. POSM is found to be faster and more effective than other optimization techniques in terms of CPU time, number of **iterations** , objective **function** evaluations, and the need for super-polygon **shrinkage** . Development, application, and evaluation of the algorithm are described.

11/3,K/23 (Item 23 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

01194451 SUPPLIER NUMBER: 05245386
Masstor boosts capacity of data library. (Masstor Systems Corp.)
Goff, Leslie
MIS Week, v8, n25, p16(1)
June 22, 1987
ISSN: 0199-8838 LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

...ABSTRACT: capacity. The M860 uses video-recording media to store data for mainframe computers within its 12.5 square foot robotics controlled library. The data are **compressed** in two steps: (1) the data are checked for **repeating character strings** , which are **replaced** with smaller identifiers, using a run-length limited encoding scheme analysis technique that reviews data in 1Kbyte packets, and (2) frequently used **characters** are **replaced** with unique and smaller numbers of bits, using the Huffman algorithm. The Masstor M860 is compared to the 4400 Automated Cartridge System from Storage Technology...

11/3,K/24 (Item 1 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

01044156 Supplier Number: 40081076 (USE FORMAT 7 FOR FULLTEXT)
MASSTOR ANNOUNCES DATA COMPRESSION CAPABILITY FOR ON-LINE MASS STORAGE
PR Newswire, pN/A
June 11, 1987
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 810

... line data storage, centrally-controlled mainframe networking and data management systems.

?/?5
HOW DATA COMPRESSION WORKS
Masstor provides a two-stage automated hardware data **compression** technique. The first phase, Run Length Encoding, analyzes **character** repetition. Data from the channel is analyzed in 1k data blocks called packets. Each data packet is checked for **repeated** character **strings** . Characters **repeated** more than twice in the **string** are simply **replaced** with an identifier of the **character** itself and a character count indicating the number of repetitions. Thus, the need to **repeat** multiple characters, such as blanks or zeros, is removed.

Once any **repeated characters** have been removed, a second **compression** technique known as the Huffman Algorithm, is applied. Within a given data set, characters are assigned a unique number of bits based on their frequency of use. Highly used characters have the smallest number of unique bits. By **replacing** the 8 bits per **character** standard in this way, a significant **reduction** in the amount of data to be stored can be achieved.

Finally, before writing, the compressed data is compared to the original data -- a check...

11/3,K/25 (Item 1 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

[illegible] Supplier Number: 48012696 (USE FORMAT 7 FOR FULLTEXT)
NEW PLANTS & EXPANSIONS: HI/FN Moves HQ To San Jose
Semiconductor Industry & Business Survey, v19, n10, pN/A
Sept 29, 1997

Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 234

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...and similar equipment. Compression shrinks data, making it cheaper and faster to send across networks. Encryption makes data secret, protecting against eavesdropping, theft or vandalism. **Compression** works by **replacing repeated phrases** with shorter tokens. Encryption, on the other hand, works by hiding any visible patterns within the text. For this reason, compression must always be performed...

11/3,K/26 (Item 2 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)
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03086647 Supplier Number: 46309080 (USE FORMAT 7 FOR FULLTEXT)
Iterated's Fractal Image System For Web Graphics 04/16/96
Newsbytes, pN/A
April 16, 1996
Language: English Record Type: Fulltext
Document Type: Newswire; General Trade
Word Count: 520

Fractal compression uses a wholly different technique than conventional run length encoding (RLE) **compression** systems which **replace strings** of recurring or seven-bit **characters** with token eight-bit characters. By back-tracking mathematical calculations which would have resulted in a given image appearing on a segment of the screen, an image file can be **reduced** to a series of less data intensive fractal data **strings** .

Iterated has uploaded a shareware Fractal Imager for Web masters on its own World Wide Web site at http://www/ **iterated** .com . The idea is that Webmasters download the imager and try it out. If they like it, they pay $39 to register their copy.

The imager takes a HTML (hypertext markup language) page and reduces it down to a fractal set of data **strings** known as a fractal image file (FIF). Users of the Web site then use a FIF viewer such as Iterated's free Netscape 2.0...

11/3,K/27 (Item 3 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)
(c) 2004 The Gale Group. All rts. reserv.

01080199 Supplier Number: 40695279 (USE FORMAT 7 FOR FULLTEXT)
FCC GIVES CABLE MORE TIME TO GIRD FOR SYNDEX
Television Digest, v29, n9, pN/A
Feb 27, 1989
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 1323

... extension, Comr. Dennis wanted more extension and Chmn. Patrick was "extraordinarily reluctant" but was willing to give 4-1/2 months. Dennis said in separate **statement** that cable has major administrative burden in dealing with syndex and that full scope of that burden won't be known until June 19 deadline when broadcasters that have signed program **contracts** granting syndex must notify cable. In his separate **statement** , Quello **repeated** his opposition to FCC's treatment of preexisting **contracts** -- requiring that they contain specific language on syndex in order to be covered -- and said he sees no reason to extend effective date.

Other points of clarification by FCC: (1) Cable **operators** may cherry-pick programs to **substitute** for blackouts and run them to conclusion without incurring added copyright obligations. However, operator must return to regularly carried signal that was blacked out even...

11/3,K/28 (Item 4 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

01079387 Supplier Number: 40691178 (USE FORMAT 7 FOR FULLTEXT)
COMMISSION GIVES CABLE 4-1/2 MORE MONTHS TO GIRD FOR SYNDEX
Communications Daily, v9, n36, pN/A
Feb 23, 1989
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 1058

... extension, Comr. Dennis wanted more extension and Chmn. Patrick was "extraordinarily reluctant" but was willing to give 4-1/2 months. Dennis said in separate **statement** that cable has major administrative burden in dealing with syndex and that full scope of that burden won't be known until June 19 deadline when broadcasters who have signed program **contracts** granting syndex must notify cable. In his separate **statement** , Quello **repeated** his opposition to FCC's treatment of preexisting **contracts** -- requiring that they contain specific language on syndex in order to be covered -- and said he sees no reason to extend effective date.
Other points of clarification by FCC: (1) Cable **operators** may cherry-pick programs to **substitute** for blackouts and run them to conclusion without incurring added copyright obligations. However, operator must return to regularly carried signal that was blacked out even...

11/3,K/29 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

04090720 Supplier Number: 45960948 (USE FORMAT 7 FOR FULLTEXT)
Data compression advances
Electronic Engineering Times, p118
Nov 27, 1995
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 582

... Lossless compression is fundamentally different from that of multimedia compression schemes. The latter try to approximate real-world data with data from an easily computable **function** . Then you can **substitute** the coefficients of the **function** for the data, and make huge gains in density. How well the substitution works is a subjective question that depends on how well the mathematical **function** could deceive human senses in **replacing** the original data.
Lossless **compression** is an entirely different idea. In lossless compression, you scan through the data looking for **repeating** patterns of symbols. They may be as short as little **strings** of zeros, or as complex as long sequences that just happen to reappear. You put the sequences in a dictionary, and replace them with a...

11/3,K/30 (Item 2 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

03857665 Supplier Number: 45531838 (USE FORMAT 7 FOR FULLTEXT)
THE POWER OF VOICE
InformationWeek, p39
May 9, 1995
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Tabloid; General Trade
Word Count: 2427

... before.

At Compaq, the Verbex voice system lets receiving operators keep their hands and eyes free to unpack and track returns, credit customers, and order **replacement** parts. The Compaq **operators** unpack parts while simultaneously entering data with their voices, explains Dennis Fernandez, an industrial engineer with the Houston PC maker, adding, 'It **reduces** ...'

Compaq **operators** first train the speaker-dependent system in a quiet environment. Then they bring it out on the receiving dock, amid the roar of conveyor motors...

...other machines. Whenever the system can't understand a word, the operator clicks on an icon and teaches a new word to the system by **repeating** two or three **phrases** containing the word.

Double Speak

While Fernandez admits that combining voice and the complex receiving system takes a lot of coordination, he emphasizes that people...

11/3,K/31 **(Item 3 from file: 16)**
DIALOG(R)File 16:Gale Group PROMT(R)
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02806180 Supplier Number: 43769807 (USE FORMAT 7 FOR FULLTEXT)
Compilers put out for real-time users
Electronic Engineering Times, p66
April 12, 1993
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 2082

... eliminating the overhead associated with calling the function, passing parameters and returning from the function.

The disadvantage is that it increases program size. When a **function** call is used instead of the actual **function** , a single copy of the **function** may be shared throughout the program, regardless of how many times it is called. The decision of whether to expand a **function** call depends on how often a **function** is called, and whether the programmer is optimizing the program for small size or high speed.

Unrolling a loop (making multiple copies) presents a similar...

...associated with incrementing and checking the loop induction variable. Again, however, the decision of whether or not to unroll loops depends on the number of **iterations** in the loop, and whether the program is being optimized for small size or high performance.

Code motion and common sub- **expression** elimination are both used to **minimize** redundancy in the code. Common sub- **expression** elimination is employed to remove recomputation of identical **expressions** . Code motion is a space-saving technique that the compiler uses to identify multiple copies of the same code; it then moves them, one copy at a time, to a single location. For example, if the compiler identifies **expressions** within a loop whose execution yields the same result for each pass through the loop, the compiler will calculate its value once and **substitute** that value for the actual **expression** .

Most advanced compilers offer the aforementioned optimizations. The effectiveness of these optimizations, however, is largely dependent on the compiler's ability to apply them across...

11/3,K/32 **(Item 4 from file: 16)**
DIALOG(R)File 16:Gale Group PROMT(R)
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01282591 Supplier Number: 41497046 (USE FORMAT 7 FOR FULLTEXT)
Well-organized Dispensing Controls Costs
Ophthalmology Times, p3
August 15, 1990
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade

Word Count: 701

... To handle a sizable lens inventory, the management system must enable staff members to quickly recognize when supplies are low so that stock can be **replaced** . In addition, the system should **function** in a way that **minimizes** the spoilage that occurs when lens vials are **repeatedly** opened but lenses are not dispensed, she says.

Solomon emphasizes that the management system need not be complex, and recommended the use of ordinary contact...

11/3,K/33 (Item 5 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
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01119222 Supplier Number: 41261438 (USE FORMAT 7 FOR FULLTEXT)
Tape drive capacity is ready to rocket
Electronic Engineering Times, p39
April 2, 1990
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 1347

... drive, Monsour pointed out. The device uses what's called a sliding window compression technique, looking through the most recently moved 2 kbytes for common **characters** . When **character strings** are **repeated** , they are **replaced** by pointers that tell the decompression circuit how many bytes to search back for the matching **string** . Through the amount of **compression** will vary, doubled capacity is generally expected.

Monsour noted that when the data is received at 750 kbits/s, the chip can process data quickly...

11/3,K/34 (Item 1 from file: 160)
DIALOG(R)File 160:Gale Group PROMT(R)
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01957363
Compression for mass storage
Canadian Datasystems May, 1988 p. 52
ISSN: 0008-3364

... expandable to 440 Gbytes, without data compression. With compression, the system can store more data without using additional floor space. Under the Run Length Encoding **compression** method, data packets are checked for **repeated strings** ; **repeated characters** are **replaced** with identifiers, thus, eliminating the need for **repeating** multiple **characters** . After the elimination of the **repeated characters** , a second **compression** technique assigns a number of bits--based on frequency of use--to characters. Usually, there is an 8 bits/character standard.
...

11/3,K/35 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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11582649 SUPPLIER NUMBER: 54955838 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Efficient Lagrangian relaxation algorithms for industry size job-shop scheduling problems.
Kaskavelis, Christos A.; Caramanis, Michael C.
IIE Transactions, 30, 11, 1085(1)
Nov, 1998
ISSN: 0740-817X LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 10395 LINE COUNT: 00870

... A variation of the above algorithm is employed so that the step size is machine group specific. The step size is updated according to:

(Mathematical **Expression** Omitted), (17)

where (Mathematical **Expression** Omitted). The main characteristic of the step-size updating procedure focuses on the estimation of (Delta)(L.sup.n). The two alternative procedures investigated are described next. While the multipliers are updated after each subiteration n, (i.sub.s) the step size (Mathematical **Expression** Omitted) is updated only after a full iteration n.

3.4.1. The dual cost based step-size procedure

Since (Mathematical **Expression** Omitted) is given by the current **iteration** dual cost (or surrogate dual cost), the task of finding an estimate of (L.sup.*) remains. Past work suggests using a multiple of (L.sup.n), for example, (Mathematical **Expression** Omitted) (11). Hoitomt et al. (4), have suggested **reducing** (Delta)(L.sup.n) by half after each **iteration** and multiplying (Mathematical **Expression** Omitted) by a fixed number when (Delta)(L.sup.n) becomes smaller than a certain threshold, or (L.sup.n) fails to increase. The dual cost based procedure used in the numerical examples of Section 4 is.

(Mathematical **Expression** Omitted). (18)

In the ISG method (L.sup.n,i) and (Mathematical **Expression** Omitted) **replace** (L.sup.n) and (Mathematical **Expression** Omitted).

3.4.2. The feasible cost based step-size procedure

We have also investigated the use of the best feasible cost L(F.sup.n), obtained up to **iteration** n by the post processor, to estimate the optimal cost (L.sup.*) in Equation (15). Thus, Equation (18) is replaced by:

(Delta)(L.sup.n...

11/3,K/36 (Item 2 from file: 148)

01492831 SUPPLIER NUMBER: 57043735 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Liberalization, quality and welfare: removing the Italian VER on Japanese car exports.

TOPRINI, ALESSANDRO

Applied Economics, 31, 10, 1183
Oct, 1999
ISSN: 0003-6846 LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 8554 LINE COUNT: 00751

... 1, 2, 3) and cross ((e.sub.ij), i, j = 1, 2, 3) demand elasticities for each type of car can be expressed as linear **functions** of demand parameters. After fixing the value for one elasticity, one linear equation can therefore be added to the demand system. Using the symmetry of...

...ji), i,j = 1, 2, 3), it is sufficient to fix values for three elasticities to solve the demand system. This number can be further **reduced** to two taking into account the constraints on demand **parameters** to ensure the semi-definiteness of the ` **substitution** matrix'

(A1) (MATHEMATICAL **EXPRESSION** NOT REPRODUCIBLE IN ASCII)

and those for the symmetry of the `substitution matrix'

(A2) (k.sub.ij) = (k.sub.ji) i (is not equal to...

...semi-definiteness. We fix e = 1, and (e.sub.1) = 2.5, to derive an interval for (e.sub.12). The interval is computed by **iterating** the calibration process in correspondence with different values for (e.sub.12) (with a degree of detail limited to one decimal point) and selecting the...

11/3,K/37 (Item 3 from file: 148)

01492189 SUPPLIER NUMBER: 57472139 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Comment. (response to article by James M. Robins et al., in this issue, p. 687)

Neuhaus, John M.

Journal of the American Statistical Association, 94, 447, 701(2)

Sept, 1999
ISSN: 0162-1459 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3303 LINE COUNT: 00274

... Friedman's (1991) MARS and Stone, Hansen, Kooperberg, and Truong's (1997) POLYMARS to select variables from the set of all tensor product spline-basis **functions** . MARS and POLYMARS are not oriented toward additive models or variable selection. However, they have the capacity to select an additive model when one fits well and to eliminate a variable by selecting none of the basis **functions** containing that variable. A comparison of the authors' methods with these existing methodologies would be useful. Note that Stone et al. (1997) considered regression, generalized ...additive modeling with several candidate predictor variables. A simple method for eliminating unnecessary variables in the penalized spline model of Section 3 would be to **iterate** the following backward elimination step. Given that the current model has M (greater than) 0 variables, compute GCV for each of the M submodels with one **variable** deleted. If the (M - 1)-**variable** submodel **minimizing** GCV has smaller GCV value than the M-**variable** model, then **replace** the M- **variable** model with this "best" M - 1-variable submodel and continue. Otherwise, retain the M-variable model and stop.

We tried this idea on the sampling design that the authors used in their Experiment 1 where the three **functions** were "flat," "linear," and "exponential." In 50 trials, variable 1 (corresponding to "flat") was correctly deleted 44 times. In the other six samples, no variables...

11/3,K/38 **(Item 4 from file: 148)**
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10732404 SUPPLIER NUMBER: 53526840 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Analysis of two-way layout of count data involving multiple counts in each cell.
Paul, S.R.; Banerjee, T.
Journal of the American Statistical Association, 93, 444, 1419(1)
Dec, 1998
ISSN: 0162-1459 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 7093 LINE COUNT: 00614

... sub.ij)/(n.sub.i0) is the same for all i, i = 1, ..., a, then the statistic TNBMB reduces to the very simplified form

(Mathematical **Expression** Omitted). (16)

As in Section 3.1, the QL scores with respect to (Mathematical **Expression** Omitted), (Tau) and ((Phi).sub.j) are the same as their corresponding likelihood scores, and the score for c based on the moment method is

(Mathematical **Expression** Omitted),

where ((Mu).sub.ij) = ((Alpha).sub.i)((Tau) + ((Phi).sub.j)). Now using these scores in a manner analogous to the QL scores in...

...development of TQI, it can be shown that the C((Alpha)) test is the same as the score test given in Theorem 3 when (Mathematical **Expression** Omitted) is **replaced** by the moment estimate (c.sup.*) of c obtained by solving

(Mathematical **Expression** Omitted)

iteratively . Denote the resultant statistic by TQMB. Denote the corresponding statistics for testing no effect of the factor A by TNBMA and TQMA, each of which...

11/3,K/39 **(Item 5 from file: 148)**
DIALOG(R)File 148:Gale Group Trade & Industry DB
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10167741 SUPPLIER NUMBER: 20297942 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Nonlinearly smoothed EM density estimation with automated smoothing parameter selection for nonparametric deconvolution problems.

Eggermont, P.P.B.; LaRiccia, V.N.
Journal of the American Statistical Association, v92, n440, p1451(8)
Dec, 1997
ISSN: 0162-1459 LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 5169 LINE COUNT: 00420

... call this algorithm the NEMS algorithm. The difference from the original EMS algorithm is that the operator N was not there (i.e., it was **replaced** by the identity **operator**). From a practical viewpoint, there apparently is not much of a difference between the NEMS and EMS algorithms. The theoretical advantage of the NEMS algorithm is that it is an EM algorithm for the smoothed likelihood problem

minimize (Mathematical **Expression** Omitted)

subject to f (greater than or equal to) 0 (8)

(see Eggermont and LaRiccia 1995). Similar to the approach of Eggermont (1992), we can show that (8) has a unique, continuous solution, denoted by (f.sup.n,h), and that the NEMS **iterates** converge; that is, ((((f.sub.q) - (f.sup.n,h))).sub.1) (approaches) 0, for q (approaches) (infinity), with h and n fixed. Large sample...

11/3,K/40 (Item 6 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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10167740 SUPPLIER NUMBER: 20297941 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Nonparametric estimation of a mixing density via the Kernel method.
Goutis, Constantinos
Journal of the American Statistical Association, v92, n440, p1445(6)
Dec, 1997
ISSN: 0162-1459 LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 4439 LINE COUNT: 00406

... f(y) derived from the remaining data points. The justification is that the above cross-validatory score is an unbiased estimate of the loss (Mathematical **Expression** Omitted), so choosing a value minimizing (14) will yield an estimator with small (Mathematical Expression Omitted).

Clearly, to use this criterion we must adapt it...

...we next verify what it is unbiasedly estimating.

Theorem 3. If (Mathematical Expression Omitted) is given by (16), then (Mathematical Expression Omitted). (17)

Substituting (Mathematical **Expression** Omitted) in (15) and **replacing** n(n - 1) by (n.sup.2), a standard development shows that the cross-validatory score to be **minimized** has the form

(Mathematical **Expression** Omitted), (18)

where (K.sup.*)(t) = K * K(t) - 2K(t) and * denotes convolution. Clearly, (18) contains the unknown g((y.sub.i)(where)(x.sub.i)) and g((y.sub.j)(where)(x.sub.j)) that have to be **replaced** by (Mathematical **Expression** Omitted) and (Mathematical **Expression** Omitted) respectively, so we **minimize**

(Mathematical **Expression** Omitted). (19)

Because the conditional densities also depend on (Lambda), any minimization of (19) must be done in some **iterative** way. In the next section we discuss this issue, as well as the computation of (Mathematical **Expression** Omitted) itself.

5. COMPUTATIONAL ISSUES

We consider first the solution of Equation (7) and then the efficient computation of the cross-validatory score (19). The...

...by completing the data with (y.sub.i). For the complete data ((x.sub.i), (y.sub.i)), an estimate of the density is (Mathematical **Expression** Omitted). Though not a maximization, this gives us the step corresponding to the M step. The E step involves the expectation of (Mathematical Expression Omitted...

11/3,K/41 (Item 7 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

[illegible] SUPPLIER NUMBER: 20098823 (USE FORMAT 7 OR 9 FOR FULL TEXT)
An efficient estimator for the generalized semilinear model.
[illegible], Mary Jane; Self, Steven G.
Journal of the American Statistical Association, v92, n439, p1033(8)
Sep, 1997
ISSN: 0162-1459 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 6276 LINE COUNT: 00526

... sup.(k)) - X(Beta)). (16)
The quantity Z((Z(prime)WZ + n(Lambda)(Omega)).sup.-1)Z(prime)W in the last equation is the **expression** for a weighted spline smoother matrix discussed by Silverman (1985). Thus we may write (16) as
(Mathematical Expression Omitted), (17)
with (g.sub.n) in...

...sub.i)'s. Note that (g.sub.n) is a weighted nonparametric regression of R - X(Beta) on t. If the link is the identity **function** , then W = I, and the efficient score estimator **reduces** to a partial residual estimator of the form proposed by Denby (1986) and Speckman (1988).
Updates for (Mathematical Expression Omitted) and (g.sub.n) are...
...the method of generalized cross-validation (GCV) (Craven and Wahba 1979). The process is iterated until the change in deviance is less than 1% between **iterations** . At each **iteration** , we choose a new value of the smoothing **parameter** in (14) to **minimize** V((Lambda)), a modified GCV criterion:
(Mathematical **Expression** Omitted), (18)
where (Mathematical Expression Omitted), (W.sub.n) is diagonal (Mathematical Expression Omitted), and (Mathematical **Expression** Omitted) is an estimate of the number of degrees of freedom attributable to the information about (Beta) in X. We used (Mathematical **Expression** Omitted), where the (Mathematical **Expression** Omitted) are the pairwise sample correlations between T and each of the covariates associated with the parametric component. The variance of (Mathematical **Expression** Omitted) is estimated by
(Mathematical **Expression** Omitted), (19)
with ((Eta).sub.i) **replaced** by (Mathematical **Expression** Omitted).
For the estimator (Mathematical **Expression** Omitted) just described, we have the following theorem.
(TABULAR DATA FOR TABLE 1 OMITTED)
Theorem 1. Let ((Lambda).sub.nh) be the maximum of the...

11/3,K/42 (Item 8 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

08988013 SUPPLIER NUMBER: 18669946 (USE FORMAT 7 OR 9 FOR FULL TEXT)
A multilevel government model of deficits and inflation.
Abizadeh, Sohrab; Benarroch, Michael; Yousefi, Mahmood
Atlantic Economic Journal, v24, n2, p118(13)
June, 1996
ISSN: 0197-4254 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 4361 LINE COUNT: 00365

... related to the degree of product-market disequilibrium. As the state output gap falls, the rate of inflation declines. As given in Duck (1984), (Mathematical **Expression** Omitted) and (Mathematical Expression Omitted) are exogenous to the current model.
To solve for the rate of inflation, equate (8) to (9), aggregate supply equal...

...taken from the national model in Appendix II:
(Mathematical Expression Omitted),
where:
(Lambda) = 1 + (m.sub.1) - (c.sub.1)

(Theta) = (c.sub.3)
(Mathematical **Expression** Omitted)
(Mathematical **Expression** Omitted).
Equation (10) is a quasi- **reduced** form equation for the rate of inflation. It shows that the rate of inflation is positively related to the expected rate of inflation and the...

...interest rate, which is determined at the federal level.
To solve for the expected rate of inflation, first use an adaptive expectation given as:
(Mathematical **Expression** Omitted).
By **iterating** back in time, (11) links the unobservable variable - expected state inflation - to actual inflation in all previous periods. However, (Alpha) (less than) 1 implies that...

...period has less of an effect on current expectations the further back in time one goes.
Set the expected rate of inflation to be a **function** of the previous two periods:
(Mathematical **Expression** Omitted)
and then **substitute** (12) into (9) to obtain the **reduced** form equation for the rate of inflation:
(Mathematical **Expression** Omitted).
Equation (13) shows that state inflation is a **function** of trend income foreign inflation, the rate of depreciation of the exchange rate, the expected rate of inflation given by lagged inflation, and the government...

11/3,K/43 (Item 9 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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08313970 SUPPLIER NUMBER: 17816394 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Data compression advances. (Speaking of Silicon)(Column)
Wilson, Ron
Electronic Engineering Times, n877, p118(1)
Nov 27, 1995
DOCUMENT TYPE: Column ISSN: 0192-1541 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 639 LINE COUNT: 00052

...ABSTRACT: may prove to be a more important technology over time. Multimedia compression schemes try to approximate real-world data with data from an easily computable **function** ; the coefficients of the **function** can be **substituted** for the data, which increases density substantially. The efficacy of the substitution depends on how well the mathematical **function** deceives human senses in **replacing** the original data. Lossless **compression** scans data looking for **repeating** patterns of symbols; the sequences are put in a dictionary and replaced with a pointer to their place in the dictionary. Lossless compression ratios are...
... lossless compression is fundamentally different from that of multimedia compression schemes. The latter try to approximate real-world data with data from an easily computable **function** . Then you can **substitute** the coefficients of the **function** for the data, and make huge gains in density. How well the substitution works is a subjective question that depends on how well the mathematical **function** could deceive human senses in **replacing** the original data.
Lossless **compression** is an entirely different idea. In lossless compression, you scan through the data looking for **repeating** patterns of symbols. They may be as short as little **strings** of zeros, or as complex as long sequences that just happen to reappear. You put the sequences in a dictionary, and replace them with a...

11/3,K/44 (Item 10 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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07974207 SUPPLIER NUMBER: 14731989 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Data compression: packing it in. (Introdos) (Column)
Robert, Tony
Compute, v16, n1, p52(1)
Jan, 1994
DOCUMENT TYPE: Column ISSN: 0194-357X LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 598 LINE COUNT: 00066

ABSTRACT: Data compression expands storage space by fitting more data into less space. Data **compression** software identifies **repeated strings** and **substitutes** a code to stand for each **string** . Methods for achieving data **compression** are described.

11/3,K/45 **(Item 11 from file: 148)**
DIALOG(R)File 148:Gale Group Trade & Industry DB
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06691234 SUPPLIER NUMBER: 14349169 (USE FORMAT 7 OR 9 FOR FULL TEXT)
New perspectives. (IBC & Prepared Foods Conference)
Prepared Foods, v162, n8, p66(3)
July, 1993
ISSN: 0747-2536 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1831 LINE COUNT: 00150

You can lead a consumer to product trial, but you can't make him **repeat** -buy!" quips Daniel Best, technical director, Prepared Foods.

To be successful, a new fat- or cholesterol-reduced food product must meet the strict organoleptic criteria...

...gives corporations the wherewithal to control a market segment, he adds. For example, both Hershey and M&M/Mars have introduced products containing Caprenin, a **reduced** -calorie modified triglyceride that **functions** as a cocoa butter **replacer** . Yet only Procter & Gamble, the company that holds the patent for the ingredient, controls the market segment those two products fill.

Best tenders this theorum...

11/3,K/46 **(Item 12 from file: 148)**
DIALOG(R)File 148:Gale Group Trade & Industry DB
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06228514 SUPPLIER NUMBER: 12960109 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Chemically bonded sand systems updated. (conference highlights)
Heine, Hans J.
Foundry Management & Technology, v120, n8, p21(4)
August, 1992
ISSN: 0360-8999 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 2140 LINE COUNT: 00176

The key to computer control of production is **repeatability** and standardization, says J. Jordan, BCIRA. **Repeatability** can be assured by tooling identification whereby electronic tags are fixed to the equipment. As the corebox fitted with the tag is indexed into the...

...developed containing information that is relevant to all processing operations.

New generations of logic control equipment will be able to monitor increasing numbers of **functions** , **replacing** error-prone humans in the future. The use of **compact** , computer-controlled foundry operations should improve overall efficiency.

Use of Alkaline Phenolic Resin

P. Martin, Industrial Aviles, S.A., Spain, discussed the production of large...

11/3,K/47 **(Item 13 from file: 148)**
DIALOG(R)File 148:Gale Group Trade & Industry DB
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05913963 SUPPLIER NUMBER: 12460731 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The efficient tariff: systematically balancing security and welfare concerns.
Ashton, Michael
American Economist, v36, n1, p44(9)
Spring, 1992
ISSN: 0569-4345 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 3062 LINE COUNT: 00238

... Q.sub.s]. Therefore, if domestic import at the current world price are [Q.sub.s*] - [Q.sub.d*] for any [P.sup.t],
[Mathematical **Expression** Omitted]
Substituting (5) for the import term,
[Mathematical Expression Omitted]
R(t) and W(t) are graphed in figure 1. The reader will note that...

...in order to find R'(t).(7)
We begin:
[Mathematical Expression Omitted]
Note that:
[Mathematical Expression Omitted]
Note in turn that, substituting for Z:
[Mathematical **Expression** Omitted]
Substituting (11) into (10),
[Mathematical **Expression** Omitted]
which is analogous to:
[Mathematical **Expression** Omitted]
Substituting (12a) and (12b) into (9) and re- **substituting** for Z.
[Mathematical **Expression** Omitted]
Reducing (remembering that [P.sup.t] = P + t).
[Mathematical **Expression** Omitted]
This is the equation for the upper limit of the marginal disruption risk. A graph of this **function** is shown in Figure 2. Note that R'(t) varies as - t, as predicted.
By plotting R'(t) and W'(t) on the same graph...

...identify visually the most efficient tariffs as the tariff that causes R'(t) = W'(t) in absolute value (See Figure 3). The visual method or **iterative** calculation may be used to find the intersection point. Figure 4 shows a sample calculation for k = 11 billion, [e.sub.s] = 2, [e.sub...

11/3,K/48 **(Item 14 from file: 148)**
DIALOG(R)File 148:Gale Group Trade & Industry DB
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04835026 SUPPLIER NUMBER: 08251856 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The formation of expected future price: a reference price for forward-looking consumers.
Jacobson, Robert; Obermiller, Carl
Journal of Consumer Research, v16, n4, p420(13)
March, 1990
ISSN: 0093-5301 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 9860 LINE COUNT: 00822

... by adding a fraction of the difference between the actual price and previous period's forecast to their previous period's forecast. That is,
[Mathematical **Expressions** Omitted] (1)
By **repeated substitution** for [F.sub.t-k], Equation 1 gives rise to the **reduced** form solution:
[Mathematical **Expressions** Omitted] (2)
That is, for 0 < [beta.sup.a] < 1, the price expectation can be expressed as a weighted average of all past prices. As...

11/3,K/49 (Item 15 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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04524120 SUPPLIER NUMBER: 08154996 (USE FORMAT 7 OR 9 FOR FULL TEXT)
68040 raises the stakes in CISC; Motorola aims for technological one-upmanship. (includes related articles on operating systems running under the chip and how it will compete with Intel's 80486)
Wharton, John
Microprocessor Report, v4, n2, p1(8)
Feb 7, 1990
ISSN: 0899-9341 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 5467 LINE COUNT: 00434

... the emulation library directly would operate much less efficiently on a 68030/68882 system.

In specialized applications, it may be possible to accelerate complex FPU **function** performance even more if input data sets are well controlled or less precise results are sufficient. In such situations, Motorola's standard floating-point emulation routines could be **replaced** by faster versions that omit **operand** error-checking steps or **reduce** the number of loop **iterations** .

Finally, it's relatively easy to get the simple logic **functions** right. The bugs encountered in the 486 that halted manufacturing and delayed production shipments were not in the design of adder or multiplier logic, but in the microcode for the trigonometric **functions** and the floating-point error handlers. On the 040, these **functions** are implemented in software libraries, rather than in microcode, so similar oversights might be fixed via software updates.

Reactions and Conclusion

Based on the technical...

11/3,K/50 (Item 16 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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03909927 SUPPLIER NUMBER: 07318916 (USE FORMAT 7 OR 9 FOR FULL TEXT)
MNP accelerates, improves 2,400-bps modems. (Microcom Networking Protocol)
Batterson, David
PC Week, v6, n20, p124(2)
May 22, 1989
ISSN: 0740-1604 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1215 LINE COUNT: 00099

... MNP Class 6 adds features for Universal Link Negotiation and Statistical Duplexing, which improve how MNP modems link up during data transfers.

MNP's data- **compression** algorithm -- done ''on the fly'' -- **replaces** repetitive **character strings** with symbols consisting of fewer bits.

MNP Class 7 defines an Enhanced Data Compression. A 2,400-bps modem using Class 7 data compression will...

...technology at Microcom.

Kenneth Miller, chief technology officer at Concord Data Systems Inc., a Marlboro, Mass., modem company, said that MNP, which uses an automatic **repeat** request (ARQ) technique, ''continually checks the integrity of the data, and retransmits only the packets of data corrupted by line problems.''

The MCI Mail network...

11/3,K/51 (Item 17 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
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SUPPLIER NUMBER: 06389758 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Icon-based process control software simplifies strategy development. (Paragon Control)
Murphy, Chuck
Plant Engineering, v42, n7, p71(2)
May 12, 1988
DOCUMENT TYPE: evaluation ISSN: 0032-082X LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 1124 LINE COUNT: 00089

... boards.

Control strategies can be designed with a full hierarchical structure behind them. Building a control strategy is a three-step procedure: choose the desired **function** blocks (select and position them using the mouse); fill in the relevant parameters (tag name, scan rate, high and low range, high and low alarm) using the pull-down specification menu; and connect the **function** blocks by drawing lines with the mouse. The control strategy is self-documenting and both a picture and a database listing can be printed. The scan rate for each **function** block is user definable. Of special note is the "compounds" **function** that allows a user to **condense** control strategies into a single, user-named block that can be stored in a library for **repeated** use.

The package also gives the user the ability to create a strategy for simulation. Before going on-line, the user replaces I/O blocks...

...user-selectable noise and delays to approximate a real process. When the user is satisfied with the simulation testing, the SIM blocks are removed and **replaced** with **function** blocks representing the hardware device to which the computer is connected. True distributed control is available by designing the control strategy on the PC and...

11/3,K/52 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02315546 86920332
Using genetic algorithm for the optimization of electromagnetic devices
Zaoui, F; Marchand, C
Compel v17n2 PP: 181-185 1998
ISSN: 0332-1649 JRNL CODE: COPL
WORD COUNT: 1140

...TEXT: are selection, crossover with a probability Pc of 0.6, and mutation with a probability Pm of 0.033.

Nevertheless, we use an advanced selection **operator** , **minimizing** the best individuals' importance within the current population to keep a certain diversity, which is theoretically the guarantee of a good convergence. The chosen technique is a linear transform where we **replace** the goal **function** F by an advanced one Fcents :

...

a and b, depending on the current population, are easily computed at each genetic **iteration** [4].
The stop conditions exist for all **iterative** processes. Here, the numerical calculation is stopped when the genetic algorithm reaches a generation number established at the process beginning. This can reveal a solution...

11/3,K/53 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02271204 86926312

Condition-based maintenance: tools and decision making
Albert H.C. Tsang
Journal of Quality in Maintenance Engineering v01n3 PP: 3-17 1995
ISSN: 1355-2511 JRNL CODE: QMGR
WORD COUNT: 5582

...TEXT: failure;

- repair at failure is more costly than repair immediately after an inspection.

A control limit policy with state dependent inspection interval is developed to **minimize** expected cost per unit time. The decision **variables** of the model are:

- the critical state triggering a preventive repair;

- the time to the next inspection [tau][sub]i where i is the observed state at inspection.
The necessary condition for existence of an optimal solution as well as an **iterative** procedure to solve the model are provided.

An extension of Luss's model is given by Sengupta[12]. In this extension, the repair cost is an increasing **function** of deterioration and delayed repair/ **replacement** action is allowed. An **iterative** algorithm to find the solution is also presented.

Zuckerman[13] develops a model to deal with problems having these characteristics: perfect inspection; fixed inspection intervals...

... horizon; a failure is discovered only at inspection; the repair and operating costs are non-decreasing with degree of deterioration. A control limit policy for **minimizing** expected cost per unit time is presented. The decision **variable** in this model is the critical state triggering a preventive repair. The necessary condition for existence of an optimal solution is also specified. Although a procedure to solve the model is not given, it notes that the difficulty depends on the structure of the survival **function** of the system and the distribution of the damage induced by the shock.

Rosenfield[14] considers a slightly different scenario with these conditions: perfect inspection...

11/3,K/54 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01315825 99-65221
Compression technology
Anonymous
Government Executive v28n10 PP: 36 Oct 1996
ISSN: 0017-2626 JRNL CODE: GOV
WORD COUNT: 353

...TEXT: by eliminating empty data fields and redundant or unnecessary data. White space in documents, for instance, is saved as chunks instead of individual pixels. And **repeated phrases** are **replaced** with computer symbols known as tokens. **Compression** ratios range anywhere from 10-to-1 to 100-to-1, depending on the file type .

Two types of compression methodologies exist: lossy and loss...

11/3,K/55 (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00942652 95-92044
Managing WAN costs
Willmer, Rachel
Telecommunications (International Edition) v28n10 PP: 40-46 Oct 1994
JRNL CODE: TIE
WORD COUNT: 2060

...TEXT: to 4:1 claimed. There are many compression algorithms in use, including the widely used V.42bis, which works on the basis of identifying repetitive **strings** in a data stream and **substituting** abbreviations. Header **compression** works by eliminating redundant or **repeated** information in the protocol headers, wrapped round each data packet sent over the WAN. For TCP connections running over slow links, up to 19.2...

11/3,K/56 (Item 5 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00635561 92-50501
Associative-Commutative Reduction Orderings
Bachmair, Leo
Information Processing Letters v43n1 PP: 21-27 Aug 10, 1992
ISSN: 0020-0190 JRNL CODE: IPL

ABSTRACT: Rewrite systems are sets of directed equations used to compute by **repeatedly replacing** subterms in a given **expression** by equal terms until a simplest form possible (a normal form) is obtained. If a rewrite system is terminating, that is, allows no infinite sequence of rewrites, then every **expression** has a normal form. A variety of orderings, called **reduction** orderings, have been designed for proving termination, but most of them are not applicable to extended rewrite systems, where rewrites take into account such properties of **functions** as associativity and commutativity. The analysis shows how an ordering represented as a schematic rewrite system - the lexicographic path ordering - can be systematically modified into...

11/3,K/57 (Item 1 from file: 647)
DIALOG(R)File 647:CMP Computer Fulltext

01073841 CMP ACCESSION NUMBER: EET19951127S0090
Data compression advances (SPEAKING OF SILICON)
Ron Wilson
ELECTRONIC ENGINEERING TIMES, 1995, n 877, PG118
PUBLICATION DATE: 951127
JOURNAL CODE: EET LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: Design - Solid State
WORD COUNT: 584

... lossless compression is fundamentally different from that of multimedia compression schemes. The latter try to approximate real-world data with data from an easily computable **function** . Then you can **substitute** the coefficients of the **function** for the data, and make huge gains in density. How well the substitution works is a subjective question that depends on how well the mathematical **function** could deceive human senses in **replacing** the original data.

Lossless **compression** is an entirely different idea. In lossless compression, you scan through the data looking for **repeating** patterns of symbols. They may be as short as little **strings** of zeros, or as complex as long sequences that just happen to reappear. You put the sequences in a dictionary, and replace them with a...

11/3,K/58 (Item 2 from file: 647)
DIALOG(R)File 647:CMP Computer Fulltext

01048801 CMP ACCESSION NUMBER: WIN19950501S0141
Cruisin' for Bargains On the Infobahn (Power Windows)
Karen Kenworthy
WINDOWS MAGAZINE, 1995, n 05, PG317
PUBLICATION DATE: 950501
JOURNAL CODE: WIN LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: How To
WORD COUNT: 1335

... than you might expect. That's because all modern archive utilities compress data before they store it in an archive.
There are dozens of popular **compression** schemes and variations. They **replace** long **sequences** of **characters** with shorter **sequences** . One method, called Run-Length Encoding (RLE), **replaces** long **sequences** of identical **characters** with an occurrence of the character and a repeat count. For example, it would **replace** a **sequence** of 25 space **characters** with a single space and the number 25.
Other schemes compress long sequences containing a variety of ... These schemes search the file looking for...

11/3,K/59 (Item 3 from file: 647)
DIALOG(R)File 647:CMP Computer Fulltext
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01018397 CMP ACCESSION NUMBER: IWK19940509S1504
Computer users have always yelled at their machines. But now the computers are beginning to listen. On Wall Street, for examp...
Mary E. Thyfault & Stephanie Stahl
INFORMATIONWEEK, 1994, n 474, 39
PUBLICATION DATE: 940509
JOURNAL CODE: IWK LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: Cover Story
WORD COUNT: 2323

... before. At Compaq, the Verbex voice system lets receiving operators keep their hands and eyes free to unpack and track returns, credit customers, and order **replacement** parts. The Compaq **operators** unpack parts while simultaneously entering data with their voices, explains Dennis Fernandez, an industrial engineer with the Houston PC maker, adding, " It **reduces** labor."
Compaq **operators** first train the speaker-dependent system in a quiet environment. Then they bring it out on the receiving dock, amid the roar of conveyor motors...
...other machines. Whenever the system can't understand a word, the operator clicks on an icon and teaches a new word to the system by **repeating** two or three **phrases** containing the word.
Double Speak While Fernandez admits that combining voice and the complex receiving system takes a lot of coordination, he emphasizes that people...

11/3,K/60 (Item 4 from file: 647)
DIALOG(R)File 647:CMP Computer Fulltext
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00558097 CMP ACCESSION NUMBER: EET19900402S1665
DATA COMPRESSION GIVES THE BOOST:Tape drive capacity is ready to rocket
TERRY COSTLOW
ELECTRONIC ENGINEERING TIMES, 1990, n 584, 39
PUBLICATION DATE: 900402
JOURNAL CODE: EET LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: DES

WORD COUNT: 1377

... drive, Monsour pointed out. The device uses what's called a sliding window compression technique, looking through the most recently moved 2 kbytes for common **characters** . When **character strings** are **repeated** , they are **replaced** by pointers that tell the decompression ... how many bytes to search back for the matching **string** . Though the amount of **compression** will vary, doubled capacity is generally expected.

Monsour noted that when the data is received at 750 kbits/s, the chip can process data quickly...

11/3,K/61 **(Item 5 from file: 647)**
DIALOG(R)File 647:CMP Computer Fulltext
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00534137 CMP ACCESSION NUMBER: EET19930412S4425
Compilers put out for real-time users
ELECTRONIC ENGINEERING TIMES, 1993, n 741, 66
PUBLICATION DATE: 930412
JOURNAL CODE: EET LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: Design: Embedded Systems Part II
WORD COUNT: 2122

... passing parameters and returning from the function.

The disadvantage is that it increases program size. When a function call is used instead of the actual **function** , a single copy of the function may be shared throughout the program, regardless of how many times it is called. The decision of whether to expand a **function** call depends on how often a **function** is called, and whether the programmer is optimizing the program for small size or high speed.

Unrolling a loop (making multiple copies) presents a similar...

...associated with incrementing and checking the loop induction variable. Again, however, the decision of whether or not to unroll loops depends on the number of **iterations** in the loop, and whether the program is being optimized for small size or high performance.

Code motion and common sub- **expression** elimination are both used to **minimize** redundancy in the code. Common sub- **expression** elimination is employed to remove recomputation of identical **expressions** . Code motion is a space-saving technique that the compiler uses to identify multiple copies of the same code; it then moves them, one copy at a time, to a single location. For example, if the compiler identifies **expressions** within a loop whose execution yields the same result for each pass through the loop, the compiler will calculate its value once and **substitute** that value for the actual **expression** .

Most advanced compilers offer the aforementioned optimizations. The effectiveness of these optimizations, however, is largely dependent on the compiler's ability to apply them across multiple **functions** , application and library modules on a program-wide basis.

The most primitive compilers optimize code line-by-line at the **expression** or **statement** level. More advanced compilers extend these optimizations to basic blocks (code that has one entry and exit point, or code between branches) and even across...

File 348:EUROPEAN PATENTS 1978-2004/Jan W05
(c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040129,UT=20040122
(c) 2004 WIPO/Univentio

Set	Items	Description
S1	767876	EXPRESSION? ? OR FUNCTION? ? OR STRING? ? OR (SEQUENCE? ? OR SERIES)(3N)(CHARACTER? ? OR LETTER? ? OR NUMBER? ? OR WORD? ? OR KEYWORD? ? OR TERM? ? OR TERMINOLOGY) OR PHRASE? ? OR SENTENCE? ? OR STATEMENT? ?
S2	36814	(REPLAC? OR SUBSTITUT? OR SWAP????)(5N)(S1 OR CHARACTER? ? OR VARIABLE? ? OR PARAMETER? ? OR OPERATOR? ? OR OPERAND? ? OR DELIMITER? ? OR SUBSTRING? ?)
S3	133853	(TRANSLAT? OR TRANSFORM? OR CONVERT? OR CONVERSION OR CHANG? OR REFORMAT? OR RE()FORMAT?)(5N)(S1 OR CHARACTER? ? OR VARIABLE? ? OR PARAMETER? ? OR OPERATOR? ? OR OPERAND? ? OR DELIMITER? ? OR SUBSTRING? ?)
S4	394616	ITERAT? OR REITERAT? OR REPEAT?
S5	115201	(REDUC? OR SHRINK??? OR SHRUNK OR CONDENS? OR CONTRACT? OR COMPACT? OR COMPRESSED OR COMPRESSION OR MINIMIZ? OR MINIMIS?-)(10N)(S1 OR CHARACTER? ? OR VARIABLE? ? OR PARAMETER? ? OR OPERATOR? ? OR OPERAND? ? OR DELIMITER? ? OR SUBSTRING? ?)
S6	321	S1(20N)S2:S3(20N)S4(20N)S5
S7	74	S6 AND IC=G06F
S8	200	S1(50N)S2(50N)S4(50N)S5
S9	52	S8 AND IC=G06F
S10	27	S9 NOT S7

7/3,K/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2004 European Patent Office. All rts. reserv.

1082565
Text summarization using part-of-speech
Textzusammenfassung unter Verwendung von Sprachteilen
Synthese de textes en utilisant des parties de parole
PATENT ASSIGNEE:
Xerox Corporation, (219786), Xerox Square - 20A, Rochester, New York 14644, (US), (Applicant designated States: all)
INVENTOR:
Grefenstette, Gregory T., 25 rue de la Liberation, 38610 Gieres, (FR)
LEGAL REPRESENTATIVE:
Grunecker, Kinkeldey, Stockmair & Schwanhausser Anwaltssozietat (100721), Maximilianstrasse 58, 80538 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 952533 A2 991027 (Basic)
APPLICATION (CC, No, Date): EP 99105851 990323;
PRIORITY (CC, No, Date): GB 9806085 980323
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: **G06F-017/30**
ABSTRACT WORD COUNT: 135
NOTE:
Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9943	1014
SPEC A	(English)	9943	6071
Total word count - document A			7085
Total word count - document B			0
Total word count - documents A + B			7085

INTERNATIONAL PATENT CLASS: **G06F-017/30**

...SPECIFICATION English and Its Applications, Reading, Mass.: Addison-Wesley, 1981, 7-16 and 253-255, describes a technique for teaching a second language that applies a **string** excision method starting at the end of a **sentence** and moving leftward. The method excises one **word** or a **word sequence** from the **sentence** if the residue is again a grammatical **sentence** ; this is **repeated** for each successive residue until no more excisions are possible. Examples of excisions include removal of a prepositional **phrase** , **reduction** of the number of elements in a conjunction, and so forth. The excision analyses of a French **sentence** and its English **translation** proved to be remarkably similar.
The invention addresses problems that arise in automatically summarizing text, particularly problems that would affect persons with visual impairment or...

7/3,K/5 (Item 5 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2004 European Patent Office. All rts. reserv.

1028834
System for analyzing and synthesis of multi-factor data
System zur Analyse und Synthese von Multifaktor-Daten
Systeme pour l'analyse et la synthese de donnees multi-facteurs
PATENT ASSIGNEE:
MITSUBISHI DENKI KABUSHIKI KAISHA, (208589), 2-3, Marunouchi 2-chome Chiyoda-ku, Tokyo 100-8310, (JP), (applicant designated states: AT;BE;CH;CY;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
INVENTOR:
Tennenbaum, Joshua B., 25 Alhambra Court, Portola Valley, California

94028, (US)
Freeman, William T., 16 Half Moon Hill, Acton, Massachusetts 01720, (US)
LEGAL REPRESENTATIVE:
Pfenning, Meinig & Partner (100961), Mozartstrasse 17, 80336 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 917072 A2 990519 (Basic)
APPLICATION (CC, No, Date): EP 98114893 980807;
PRIORITY (CC, No, Date): US 970824 971114
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: **G06F-017/27**
ABSTRACT WORD COUNT: 221

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9920	265
SPEC A	(English)	9920	4199
Total word count - document A			4464
Total word count - document B			0
Total word count - documents A + B			4464

INTERNATIONAL PATENT CLASS: **G06F-017/27**

...SPECIFICATION for typography likely provide a good starting place. In fact, this is the initial starting condition during the application process.

At step 130, a potential **function** is generated based upon the initially determined conditions. The potential function is the sum of the squared difference between each component of the model output and the training data, summed over all components of all the training data. Standard least squares techniques to find the **parameter** values which **minimize** the sum of squared differences between the model and the data. The model output is given by either equation (1) or equation (2), depending on...

...a value for equation (3) has been determined (step 4), a new step direction is determined at step 140. The step direction refers to the **variable** being **changed** and to the size of the **change** . With arbitrary values for the **parameters** , each of the factor **parameter** vectors are successively selected for **minimization** . General **minimization** techniques are then used to determine the size of **changes** to **parameters** for that vector at step 150. The generation of the potential **function** 130, determine step direction 140, and **minimize** the **function** 150 steps are **repeated** until an optimum (step 160) is reached. The parameter vectors for each factor are then stored or outputted as the model for the data.

The...

7/3,K/6 **(Item 6 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00984948
N-WAY PROCESSING OF BIT STRINGS IN A DATAFLOW ARCHITECTURE
N-WEG VERARBEITUNG VON BITKETTEN IN EINER DATENFLUSSARCHITEKTUR
TRAITEMENT A N BRANCHES DE CHAINES BINAIRES DANS UNE ARCHITECTURE A CIRCULATION DE DONNEES
PATENT ASSIGNEE:
Sand Technology Systems International, Inc., (1983140), 4141 Sherbrooke Street W, Suite 410, Westmount, Quebec H3Z 1B8, (CA), (Proprietor designated states: all)
INVENTOR:
McCOOL, Michael, W., 500 East Del Mar Boulevard 5, Pasadena, CA 91101, (US)
MARQUIS, Jean, A., 590 West Sierra Madre Boulevard E, Sierra Madre, CA 91024, (US)

LEGAL REPRESENTATIVE:
Enskat, Michael Antony Frank (50381), Saunders & Dolleymore, 9, Rickmansworth Road, Watford, Hertfordshire WD18 0JU, (GB)
PATENT (CC, No, Kind, Date): EP 961966 A1 991208 (Basic)
EP 961966 B1 031203
WO 98036349 980820
APPLICATION (CC, No, Date): EP 98909130 980218; WO 98US4796 980218
PRIORITY (CC, No, Date): US 801317 970218
DESIGNATED STATES: BE; CH; DE; FR; GB; IT; LI
INTERNATIONAL PATENT CLASS: **G06F-007/00** ; **G06F-017/30**
ABSTRACT WORD COUNT: 16630
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200349	2332
CLAIMS B	(German)	200349	1949
CLAIMS B	(French)	200349	2645
SPEC B	(English)	200349	13163
Total word count - document A			0
Total word count - document B			20089
Total word count - documents A + B			20089

INTERNATIONAL PATENT CLASS: **G06F-007/00** ...

... **G06F-017/30**

...SPECIFICATION from each of the columns. Within each bit vector, a binary bit value indicates an incidence of a columnar value within a given record (or **row**). The bit vectors are used to represent values in an RDBMS, but can also be used for other applications.
As in any RDBMS, individual data...

...operations as disclosed in U.S. Patent 5,036,457 to Glaser et al. An encoded binary bit string is decoded, or a raw bit **string** is **converted** , into a series of bit units, a **compressed** binary bit form describing either a run or an impulse. A run refers to a bit **string** of one or more contiguous bits of the same **binary** value. An impulse refers to a bit **string** of one or more contiguous bits of the same binary value followed by an ending bit having a binary value opposite the bits of the same binary value. **A** boolean operation is performed on pairs of bit units, **i** .e., runs or impulses in **compressed** form, using **an** iterative looping **construct** to form a resultant bit unit. This technique is significantly faster than operating on each bit, one at a time, as is typically done in the art.
A pair of **compressed** impulses are obtained from a pair of encoded bit **strings** (i.e., bit vectors) or a pair of **converted** raw bits strings and the impulse with the shorter (called "minimal") length is selected. The boolean operation is performed for the number of bits in...
...perform the boolean operation approximately equals the sum of the number of impulses in the two input bit vectors, which is significantly less than the **number** of bits in the input bit vectors.
The computational overhead to process bit vectors with many short impulses becomes excessive using the minimal length method...

7/3,K/10 (Item 10 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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METHOD AND SYSTEM FOR PERFORMING A BOOLEAN OPERATION ON BIT STRINGS USING A MAXIMAL BIT SLICE
VERFAHREN UND SYSTEM ZUM DURCHFUHREN EINER BOOLESCHEN OPERATION AUF BITKETTEN UNTER BENUTZUNG EINER MAXIMALEN BITSCHEIBE
PROCEDE ET SYSTEME D'EXECUTION D'OPERATION BOOLEENNE SUR UNE CHAINE BINAIRE EN TRAITANT LES BITS PAR GROUPES DE TAILLE MAXIMALE

PM ASSIGNEE:
Real Technology Systems International, Inc., (1983140), 4141 Sherbrooke Street W, Suite 410, Westmount, Quebec H3Z 1B8, (CA), (Proprietor designated states: all)
INVENTOR:
MARQUIS, Jean, A., 3345 E. Brandon Street, Pasadena, CA 91107, (US)
McCOOL, Michael, W., 500 E. Del Mar Boulevard, No. 5, Pasadena, CA 91101, (US)
LEGAL REPRESENTATIVE:
Enskat, Michael Antony Frank et al (50381), Saunders & Dolleymore, 9, Rickmansworth Road, Watford, Hertfordshire WD18 0JU, (GB)
PATENT (CC, No, Kind, Date): EP 912922 A1 990506 (Basic)
EP 912922 B1 030409
WO 97021170 970612
APPLICATION (CC, No, Date): EP 96941388 961118; WO 96US18509 961118
PRIORITY (CC, No, Date): US 566005 951201
DESIGNATED STATES: BE; CH; DE; FR; GB; IT; LI
INTERNATIONAL PATENT CLASS: **G06F-007/38** ; **G06F-007/00** ; H03M-007/46
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200315	1300
CLAIMS B	(German)	200315	1107
CLAIMS B	(French)	200315	1441
SPEC B	(English)	200315	7765
Total word count - document A			0
Total word count - document B			11613
Total word count - documents A + B			11613

INTERNATIONAL PATENT CLASS: **G06F-007/38** ...

... **G06F-007/00**

...SPECIFICATION be located by interrogating the database using queries. A common form of a query process involves a boolean operation operating on a pair of bit **strings** to form a resultant bit **string** that represents those database records that satisfy the conditions of the query.

To save space, the bit **strings** can be **compressed** , encoded and processed according to a boolean operation as disclosed in U.S. Patent 5,036,457 to Glaser et al.. An uncompressed binary bit **string** is **converted** into a **compressed** binary bit form consisting of either a run or an impulse. A boolean operation is performed on pairs of impulses in compressed form using an **iterative** looping construct to form a resultant bit **string** . This technique is significantly faster than operating on each bit, one at a time, as is typically done in the art.

A pair of **compressed** impulses are obtained from a pair of encoded bit **strings** and the impulse with the shorter (called "minimal") length is selected. The boolean operation is performed for the number of bits in the minimal length impulse and a resultant bit **string** of this minimal length is formed. This cycle is repeated for each of the remaining minimal length impulses. The total number of cycles required to...the boolean condition (equivalent to)rA & (equivalent to)rB which indicates that both bit slices are impulses of the same length.

C. Relationships Between Bit **String** Formats

Referring to FIG. 4, a flow diagram illustrating the relationships between raw bit strings, encoded bit **strings** and **compressed** impulses is shown. Raw bit **strings** (block 120) are **converted** into **compressed** impulses (block 122) by bit **string** **converter** means 121, preferably the processor 2. Encoded bit **strings** (block 123) are decoded into **compressed** impulses (block ...are performed in accordance with the present invention on pairs of compressed impulses (block 122) to form resultant compressed impulses (block 126). Optionally, the resultant **compressed** impulses (block 126) are encoded **translated** into bit **strings** (block 128) by encoder means 127, preferably the encoder/decoder 14.

V. Bit String Processing
Referring to FIGS. 5A, 5B, 6A, 6B and 6C, a...

...processed using the length of the longest ("maximal") current bit slice 41a during each cycle of a main program loop to form a resultant bit **string** 52, 58, 64. As above, the pair of bit strings A 40 and B 46 and each resultant bit string 52, 58, 64 are shown...

7/3,K/13 (Item 13 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00716993
Data compression method and system
Datenkompressionsverfahren und System
Procede et systeme de compression des donnees
PATENT ASSIGNEE:
SETA CO., LTD., (1936671), 3-1-25, Ariake, Koto-ku, Tokyo, (JP), (Proprietor designated states: all)
INVENTOR:
Watanabe, Hiroyuki, c/o Seta Co., Ltd., 35-1, Nishi-Kamata 7-chome, Ohta-ku, Tokyo 144, (JP)
LEGAL REPRESENTATIVE:
Prufer, Lutz H., Dipl.-Phys. et al (38295), PRUFER & PARTNER, Patentanwalte, Harthauser Strasse 25d, 81545 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 678986 A1 951025 (Basic)
EP 678986 B1 000712
APPLICATION (CC, No, Date): EP 95106020 950421;
PRIORITY (CC, No, Date): JP 94107837 940422
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: H03M-007/42; **G06F-005/00**
ABSTRACT WORD COUNT: 94
NOTE:
Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200028	774
CLAIMS B	(German)	200028	683
CLAIMS B	(French)	200028	890
SPEC B	(English)	200028	5169
Total word count - document A			0
Total word count - document B			7516
Total word count - documents A + B			7516

...INTERNATIONAL PATENT CLASS: **G06F-005/00**

7/3,K/16 (Item 16 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00600758
Input of special characters
Eingabe von Sonderbuchstaben
Entree de caracteres speciaux
PATENT ASSIGNEE:
SONY CORPORATION, (214024), 7-35 Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, (JP), (applicant designated states: DE;FR;GB)
INVENTOR:
Takehara, Mitsuru, c/o Intellectual Property Div., Sony Corporation, 6-7-35 Kitashinagawa, Shinagawa-ku, Tokyo 141, (JP)
Bookman, Marc, c/o Intellectual Property Div., Sony Corporation, 6-7-35 Kitashinagawa, Shinagawa-ku, Tokyo 141, (JP)
LEGAL REPRESENTATIVE:

Fetter, Ivan John et al (29661), D. YOUNG & CO. 21 New Fetter Lane, London EC4A 1DA, (GB)
PATENT (CC, No, Kind, Date): EP 588538 A1 940323 (Basic)
EP 588538 B1 980715
APPLICATION (CC, No, Date): EP 93306973 930903;
PRIORITY (CC, No, Date): JP 92271004 920914
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: **G06F-003/023**
ABSTRACT WORD COUNT: 123

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9829	453
CLAIMS B	(German)	9829	405
CLAIMS B	(French)	9829	486
SPEC B	(English)	9829	7048
Total word count - document A			0
Total word count - document B			8392
Total word count - documents A + B			8392

INTERNATIONAL PATENT CLASS: **G06F-003/023**

...SPECIFICATION language of the second country so as to be displayed on the display means, and when the conversion key is manually operated after the displayed **character** is **converted** into the last one of the associated **characters** , a similar **sequence** of **conversion** and displaying operations may be **repeated** .
The invention may be embodied in a variety of forms of information processing apparatus having a character inputting **function** , for example a reproducing apparatus which reproduces a CD-ROM (**compact** disk read only memory) of, for example, the XA format.
The invention will now be further described, by way of illustrative and non-limiting example...

7/3,K/19 **(Item 19 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00501151
DATA COMPRESSION AND RESTORATION METHOD AND DEVICE THEREFOR
VERFAHREN ZUR KOMPRIMIERUNG UND WIEDERHERSTELLUNG VON DATEN UND GERAT DAZU
PROCEDE DE COMPRESSION ET DE RECONSTITUTION DE DONNEES ET DISPOSITIF PREVU A CET EFFET
PATENT ASSIGNEE:
FUJITSU LIMITED, (211460), 1015, Kamikodanaka, Nakahara-ku, Kawasaki-shi, Kanagawa 211, (JP), (Proprietor designated states: all)
INVENTOR:
YOSHIDA, Shigeru, 218-3, Kawaraguchi, Ebina-shi, Kanagawa 243-04, (JP)
NAKANO, Yasuhiko, Fujitsu Atsugi Ryo, 2-3-10, Sakae-cho, Atsugi-shi, Kanagawa 243, (JP)
OKADA, Yoshiyuki, City Haitsu Ohkid 405, 256-1, Tanaka, Isehara-shi, Kanagawa 259-11, (JP)
HIBA, Hirotaka, Fujitsu Atsugi Ryo, 2-3-10, Sakae-cho, Atsugi-shi, Kanagawa 243, (JP)
LEGAL REPRESENTATIVE:
Joly, Jean-Jacques et al (39741), Cabinet Beau de Lomenie 158, rue de l'Universite, 75340 Paris Cedex 07, (FR)
PATENT (CC, No, Kind, Date): EP 472730 A1 920304 (Basic)
EP 472730 A1 921216
EP 472730 B1 000510
WO 9113395 910905
APPLICATION (CC, No, Date): EP 91904319 910226; WO 91JP252 910226
PRIORITY (CC, No, Date): JP 9045163 900226; JP 9062325 900313; JP 9070379 900320; JP 90275835 901015
DESIGNATED STATES: DE; FR; GB
RELATED DIVISIONAL NUMBER(S) - PN (AN):

EP 871294 (EP 98201925)
EP 871295 (EP 98201926)
EP 878915 (EP 98201928)
INTERNATIONAL PATENT CLASS: **G06F-005/00** ; H03M-007/30
ABSTRACT WORD COUNT: 192

LANGUAGE (Publication,Procedural,Application): English; English; Japanese
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200019	560
CLAIMS B	(German)	200019	524
CLAIMS B	(French)	200019	670
SPEC B	(English)	200019	14379
Total word count - document A			0
Total word count - document B			16133
Total word count - documents A + B			16133

INTERNATIONAL PATENT CLASS: **G06F-005/00** ...

...SPECIFICATION prefix string (omega), exits in the dictionary.
In the conventional method, at the initial stage of the input data, the ratio of presence of the **string** ((omega)K) is in the dictionary is small. In the flowchart of Fig. 9, since the dictionary initial value obtained through learning the sample data is already stored, it is determined that the **string** "(omega)K" is present in the dictionary in step S4 and the process is advanced to step S5 to **replace** the prefix **string** (omega) with the **string** "(omega)K" to return the process to step S2. Subsequently, the search process for finding the maximum coincidence is **repeated** until the results of the search becomes impossible to obtain. As a result, even for reference of the input data, the chains of **strings** that can be searched from the dictionary can be increased to improve the **compression** ratio.
Of course, when the **string** ((omega)K) is not found in the dictionary, the process is advanced to step S6 to output the current reference number (omega) as code((omega)) and a **string** composed of the currently processed reference number (omega) and the next character K, is registered in the dictionary with a new reference number. Then, the prefix **string** is **replaced** with a new single **character** . Thereafter, the process returns to step S2 to perform a coding process for obtaining the maximum coincidence of a new **string** .
The flowchart of the decoding process is illustrated in Fig. 12. In step S1, the dictionary initial value obtained though the processes of the flowchart...

7/3,K/20 **(Item 20 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00481317
Method of and system for evaluating and modifying knowledge.
Verfahren und System um Wissen auszuwerten und zu verandern.
Procede et systeme pour evaluer et modifier de la connaissance.
PATENT ASSIGNEE:
HITACHI, LTD., (204144), 6, Kanda Surugadai 4-chome, Chiyoda-ku, Tokyo 100, (JP), (applicant designated states: FR;GB)
INVENTOR:
Someya, Ryuko, Hitachi Kotohira Apartment 402, 320-1, Ozenji, Asao-ku, Kawasaki-shi, (JP)
Kosaka, Michitaka, 8-4, Futaba-1-chome, Sagamihara-shi, (JP)
Mizuno, Hirotaka, Hitachi Ishibashi Shataku, 2-205 5 Soen-2-chome, Ikeda-shi, (JP)
Sasaki, Toshiro, Daini Kaneko Haitsu 306, 3-3- Azamino-1-chome, Midori-ku, Yokohama-shi, (JP)
Suemitsu, Satoru, 8-30, Sugebanba-1-chome, Tama-ku, Kawasaki-shi, (JP)
LEGAL REPRESENTATIVE:
Calderbank, Thomas Roger et al (50121), MEWBURN ELLIS & CO. 2/3 Cursitor Street, London EC4A 1BQ, (GB)

PATENT (CC, No, Kind, Date): EP 446066 A2 910911 (Basic)
EP 446066 A3 930421
APPLICATION (CC, No, Date): EP 91301951 910308;
PRIORITY (CC, No, Date): JP 9056356 900309; JP 90276292 901017
DESIGNATED STATES: FR; GB
INTERNATIONAL PATENT CLASS: **G06F-015/40** ; **G06F-009/44**
ABSTRACT WORD COUNT: 184

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	1765
SPEC A	(English)	EPABF1	11675
Total word count - document A			13440
Total word count - document B			0
Total word count - documents A + B			13440

INTERNATIONAL PATENT CLASS: **G06F-015/40** ...

... **G06F-009/44**

...SPECIFICATION Fig. 37. In the simulated annealing method, during a process of repetitious computations to attain the optimal value, the value of a temperature Tk is **reduced** as a **variable** related to the **iteration** count as follows (Formula omitted) Moreover, a quantity of valuation (DELTA)Ri of the unknown parameter is set according to a normalized random number N (0, aTk) so that the variance of the random numbers is proportional to the temperature Tk. Under these conditions, the value of the **expression** (17) is evaluated by **changing** the value of (DELTA)Ri. Based on the results, (Formula omitted) (Formula omitted) an influence of the evaluation **function** is computed with respect to (DELTA)Ri as follows. (see image in original document)
Thereafter, the state of Ri is changed under the conditions (see...

7/3,K/25 **(Item 25 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00184558
Machine translation system.
System zur maschinellen Ubersetzung.
Systeme pour la traduction par machine.
PATENT ASSIGNEE:
KABUSHIKI KAISHA TOSHIBA, (213130), 72, Horikawa-cho Saiwai-ku, Kawasaki-shi Kanagawa-ken 210, (JP), (applicant designated states: DE;FR;GB)
INVENTOR:
Doi, Miwako c/o Patent Division, Kabushiki Kaisha Toshiba 1-1 Shibaura 1-chome, Minato-ku Tokyo 105, (JP)
LEGAL REPRESENTATIVE:
Freed, Arthur Woolf et al (30751), MARKS & CLERK 57-60 Lincoln's Inn Fields, London WC2A 3LS, (GB)
PATENT (CC, No, Kind, Date): EP 189665 A1 860806 (Basic)
EP 189665 B1 930303
APPLICATION (CC, No, Date): EP 85309268 851219;
PRIORITY (CC, No, Date): JP 84271808 841225
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: **G06F-015/38**
ABSTRACT WORD COUNT: 198

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	785
CLAIMS B	(German)	EPBBF1	691
CLAIMS B	(French)	EPBBF1	843
SPEC B	(English)	EPBBF1	4008

Total word count - document A 0
Total word count - document B 6327
Total word count - documents A + B 6327

INTERNATIONAL PATENT CLASS: **G06F-015/38**

...SPECIFICATION is made by using the selected possibility.
Selected translation possibilities and/or combinations of possibilities are stored as data corresponding to original words and/or **phrases** and/or combinations of the original words and/or phrases. When the same words and/or phrases or combinations thereof appear in original **sentences** , the selected and stored **translation** possibilities are displayed first.
According to the present invention, when translation processes includes "ambiguity", appropriate **translated** words and **phrases** from the original **sentences** can be easily selected. For this reason, translation is efficiently processed while "ambiguity" is **minimized** .
The translation possibilities and/or their combinations selected by the **operator** are stored as data corresponding to the words and/or **phrases** and/or combinations thereof of the original **sentences** . When the same words and/or **phrases** and/or combinations thereof **repeatedly** appear in original **sentences** for **translation** , the stored data is utilized to display the selected possibilities and/or their combinations first. The input operation is thus simplified to effectively perform translation...

7/3,K/49 **(Item 23 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

00772855 **Image available**
PROCESSING MEDICAL DATA IN DIFFERENT FORMATS
TRAITEMENT DE DONNEES MEDICALES DANS DES FORMATS DIFFERENTS
Patent Applicant/Assignee:
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Patent Applicant/Inventor:
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Legal Representative:
FEIGENBAUM David L, Fish & Richardson, P.C., 225 Franklin Street, Boston, MA 02110-2804, US
Patent and Priority Information (Country, Number, Date):
Patent: WO 200106348 A1 20010125 (WO 0106348)
Application: WO 2000US17549 20000626 (PCT/WO US0017549)
Priority Application: US 99144471 19990719; US 2000587203 20000605
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 5856

Main International Patent Class: **G06F-007/00**
Fulltext Availability:
Detailed Description

Detailed Description

... ust the data content of the MDO or on the entire transmission unit (including header data generated as part of the process of transmission). Content **compression** can be as simple as removing extra space characters, inserting a single repeat **character** to indicate a **string** of repeated **characters** , and **substituting** smaller bit **strings** for frequently occurring **characters** . **Compression** or decompression is performed by a program that uses an algorithm to determine how to compress or decompress data. The algorithms analyze the morphological characteristics...

...and create a version of it in which redundant information is represented in optimal ways. Such an algorithm could use (1) statistical models for data **compression** and decompression; (2) **substitution** of occurrence of a particular **phrase** or group of bytes with a reference to a previous 8
occurrence of that phrase while keeping track of the last n bytes of data ...

...seen, outputing a pair of values corresponding to the position of the phrase in the previously-seen buffer of data, and the length of the **phrase** .

The XML Document
Following is an example of how a **compressed** Unicode version of an MDO may be embedded in an XML document, showing the tags.

<?xml version="1.0"?>
<ECGDOC><ECG-HEADER><Patient-Unit-No...

7/3,K/51 **(Item 25 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00149740 **Image available**
A DATA STRUCTURE AND ITS USE
STRUCTURE DE DONNEES ET SON UTILISATION
Patent Applicant/Assignee:
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HULGAARD Henrik,
LICHTENBERG Jacob,
MOLLER Jesper,
Inventor(s):
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HULGAARD Henrik,
LICHTENBERG Jacob,
MOLLER Jesper,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200013113 A1 20000309 (WO 0013113)
Application: WO 99DK456 19990827 (PCT/WO DK9900456)
Priority Application: DK 981084 19980827; DK 981095 19980831; DK 99277 19990301
Designated States: AE AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ CZ DE DE DK DK EE EE ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 30318

Main International Patent Class: **G06F-017/50**
International Patent Class: **G06F-017/60** ...

... **G06F-009/44**
Fulltext Availability:
Detailed Description
Claims

Detailed Description
... first node are pointed to the second node, and the first node is removed.

Another manner is one wherein.

two nodes are identified having identical **expressions** and having pointers pointing to the same nodes, where the first pointers of the two nodes point to the same node, and where the second...

...pointing to a first of the two nodes to the other of the two nodes, and deleting the first node.

Preferably, a set of predetermined **reduction** rules are **repeatedly** applied to the **operator** nodes in 15 order to remove operator nodes from the data structure so as to simplify the structure at a point in time before **converting** the **operator** nodes into "non-nal" nodes.

Most preferably, the pointers of the nodes would point pairwise to the same nodes so that the **function** of the two nodes is identical, and the first node may be omitted when all pointers pointing thereto are redirected to the second node. In...

Claim
... nodes to the other of the two nodes, and deleting the first node.

17 A method according to claim 14, wherein a set of predetermined **reduction** rules are **repeatedly** applied to the **operator** nodes in order to remove operator nodes from the data structure.

18 A method according to any of claims 14, 15, 16 and 17, further comprising the step of: identifying an operator node having pointers pointing to more than two data structures,
67
replacing the identified **operator** node by a group of operator nodes, each operator node in the group having two pointers, the group of operator nodes pointing to the more...

...18, further comprising the step of:
a) identifying an operator node having pointers pointing to two data structures comprising only
terminal nodes or nodes the **expressions** of which represent inequalities,
b) replacing the identified operator node and the data structures pointed to thereby by a new data structure generated by performing...

7/3,K/52 **(Item 26 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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NATURAL LANGUAGE SENTENCE PARSER
ANALYSEUR DE PHRASES EN LANGAGE NATUREL
Patent Applicant/Assignee:
VIRTUAL RESEARCH ASSOCIATES INC,
Inventor(s):
BOND Douglas G,
OH Churl,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200011576 A1 20000302 (WO 0011576)
Application: WO 99US19222 19990824 (PCT/WO US9919222)
Priority Application: US 9897643 19980824
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU

TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG
CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 7985
Main International Patent Class: **G06F-017/30**
International Patent Class: **G06F-017/27**
Fulltext Availability:
Detailed Description
Claims

Detailed Description
... consecutively and compared with a first list of rules in order to produce a narrower set of possible syntactic interpretations of the words of the **sentence** . Syntactic identifiers in the token may be deleted or replaced by identifiers covering a smaller class of words. This token merging step is **repeated** until no further **changes** can be determined for the **sentence** at that level of rules. Using the narrower set of possible interpretations, token merging proceeds by matching the current set of tokens against a second list of rules. Further reduction in the number of syntactic interpretations is made possible. The first level token merging and second level token merging are **reiterated** until no further **reductions** in the syntax of the **sentence** can be made.

Another embodiment may include the step of matching consecutive words in a **sentence** with multiple words in a dictionary. If the dictionary contains possible syntactic identifiers for the consecutive words used in coRjunction, then a token for the...

Claim
... code.

18 The computer program product of claim 13 wherein said first inductive merging program code in coRjunction with the first set of rules identifies **phrase** structures in the sentence.

19 The computer program product of claim 13 wherein said second inductive merging program code identifies in coqjunction with the second of a string of words and
generates syntactic possibilities for the words of the **sentence** ;
a **replaceable** set of first **substitution** and concatenation rules;
a replaceable set of second substitution and concatenation rules; and
an **iterative** inductive processor for receiving sentences that have been processed by said tokenization module and matching said **sentences** first against the **replaceable** set of first substitution and concatenation rules and then against the replaceable set of second
26
SUBSTITUTE SHEET (RULE 26)
substitution and concatenation rules and **reiterating** said matching to **reduce** the syntactic possibilities for a **sentence** .
21 The **sentence** parser of claim 20 further comprising a multiword comparator.

22 The **sentence** parser of claim 20 further comprising a deductive processor arranged to operate on the syntactic possibilities remaining from said **iterative** inductive processor so as to further reduce the syntactic possibilities for the **sentence** .

23 The **sentence** parser of claim 20 wherein said tokenization module generates syntactic possibilities by looking up each word in a dictionary, identifying the syntactic identifiers associated with...

7/3,K/68 **(Item 42 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00218723 **Image available**
COMPACTION OF A QUERYING IN RELATIONAL DATABASES

COMPACTAGE D'UNE INTERROGATION DANS LE DOMAINE DES BASES DE DONNEES RELATIONNELLES
Patent Applicant/Assignee:
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Inventor(s):
  KIMBALL Ralph B,
  BURGESS Rebecca L,
  WILLIS Linda V,
  McCREIGHT Edward,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 9215954 A1 19920917
  Application: WO 92US1901 19920306 (PCT/WO US9201901)
  Priority Application: US 91848 19910308
Designated States: AT AU BE BR CA CH DE DK ES FR GB GR IT KR LU MC NL NO SE
Publication Language: English
Fulltext Word Count: 12086

Main International Patent Class: **G06F-015/40**
Fulltext Availability:
  Detailed Description

Detailed Description
... characters in the candidate substring.

While the above scheme is straightforward to describe, it may be difficult
to find the successive candidate substrings rapidly without **repeatedly** scanning the uncompressed substring. Note that the source **string** is often radically **changed** by the removal of a common substring. It is not correct to make up a list of replacements in a single pass and then perform them all.

True optimal **compression** requires a recalculation of the best candidate **substring** after each **substitution** . Optimal **compression** is achieved by
building a specially augmented suffix tree for the source **string** and then by successively scanning and modifying this

7/3,K/69 **(Item 43 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00203374
SYSTEM AND METHOD FOR REPRESENTING AND SOLVING NUMERIC AND SYMBOLIC PROBLEMS
SYSTEME ET PROCEDE DE REPRESENTATION ET DE RESOLUTION DE PROBLEMES NUMERIQUES ET SYMBOLIQUES
Patent Applicant/Assignee:
  QUANTUM SOFTWARE INC,
Inventor(s):
  ELAD Joseph B,
  JOHNSON Apperson H,
  KRAMER Laurence A,
  KIRK Jeffery C,
  PHILLIPS Irene H,
  [illegible] Susan M,
  [illegible]TER Daniel L,
  [illegible]NIGA Erwin M,
  NORMAN William M III,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 9200565 A1 19920109
  Application: WO 91US4724 19910702 (PCT/WO US9104724)
  Priority Application: US 90447 19900702
Designated States: AT BE CA CH DE DK ES FR GB GR IT JP LU NL SE
Publication Language: English
Fulltext Word Count: 35850

Main International Patent Class: **G06F-015/18**
Fulltext Availability:
Detailed Description

Detailed Description
... and no over-active
constraints, then the reduced gradient with the lift factor is used to compute a new direction for searching the combined objective **function** , as described above. Again, when a constraint becomes active, the gradient of the combined objective **function** is **changed** (or " **reduced** ")
such that the search of combined objective **function** will move in parallel with the active constraint. In addition, the lift factor will also
be taken into account when computing the new direction. In a preferred embodiment of the present invention, if the same set of PCr/US91/04724
active constraints continues to appear in consecutive **iterations** , it is likely that the constraints are curved. Consequently, the lift factor is increased. If the set of active constraints continues to change, then the
...

7/3,K/73 **(Item 47 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00152675 **Image available**
A METHOD OF PROCESSING A TEXT IN ORDER TO STORE THE TEXT IN MEMORY
PROCEDE DE TRAITEMENT D'UN TEXTE PERMETTANT DE GARDER LE TEXTE EN MEMOIRE
Patent Applicant/Assignee:
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MOORE John Douglas,
SWAIN Peter George,
PURCELL Roger Bixby,
HILTON John,
Inventor(s):
MOORE John Douglas,
SWAIN Peter George,
PURCELL Roger Bixby,
HILTON John,
Patent and Priority Information (Country, Number, Date):
Patent: WO 8809586 A1 19881201
Application: WO 88AU161 19880525 (PCT/WO AU8800161)
Priority Application: AU 872103 19870525; AU 872104 19870525
Designated States: AT AT AU BB BE BG BJ BR CF CG CH CH CM DE DE DK FI FR GA
GB GB HU IT JP KP KR LK LU LU MC MG ML MR MW NL NL NO RO SD SE SE SN SU
TD TG US
Publication Language: English
Fulltext Word Count: 24372

International Patent Class: **G06F-05:00** ...

... **G06F-01:00**
Fulltext Availability:
Detailed Description

Detailed Description
... size of stream array */
stostate P theoretical size of compressed token stream
hashsize, /* hash table size */
hashlfmft, P hashsfzeLINITFACTOR, used to trigger rebuItdhashtbL0
PtLSfze" /* **phrase** tatty List size */
mxrfL, P number of **reduction** **phrases**
freeptt, P index to free List within ptList
threshold, /* nininn tatty on which to compress
numentries, /* number of hash table entries */
numphrases, P = r of **phrases** with tatty >* threshold

```
tastr3te, P number of new phrases per replacement phrase
fteratfcrwl, P iteration count */
Sumtatty; P sum of tho tatLys of phrases of interest
tknfrz *stream; /* array containing standard tokens Initially then
phrases
tokentype maxhex,, P maxinA hex value + I */
frzhex; P initial phrase hex value
hashentry *hashtbtf P hash tabt* array */
ttastha-shp; P used to watch for triplets etc in sweep mid
hashtatty */
pttentry *pttfst; P phrase tatty list
phrasetype *opitist; P ordered phrase index List
frzptype rftistLRILSIZEI;@ P reduction index list
```

10/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00925784
Compiling predicated code with direct analysis of the predicated code
ubersetzen von mit Voraussetzungen versehenen Kodes mit direkter Analyse des mit Voraussetzungen versehenen Kodes
Compilation de code predicate avec analyse directe du code predicate
PATENT ASSIGNEE:
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Schlansker, Michael S., 409 La Prenda, Los Altos, CA 94024, (US)
LEGAL REPRESENTATIVE:
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PATENT (CC, No, Kind, Date): EP 844557 A1 980527 (Basic)
APPLICATION (CC, No, Date): EP 97120205 971118;
PRIORITY (CC, No, Date): US 756423 961126
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: **G06F-009/45**
ABSTRACT WORD COUNT: 128

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9822	687
SPEC A	(English)	9822	7991
Total word count - document A			8678
Total word count - document B			0
Total word count - documents A + B			8678

INTERNATIONAL PATENT CLASS: **G06F-009/45**

...SPECIFICATION true predicate mapped to 1. Compare operations are processed in order, and the hash table is updated to keep track of the mappings from compare **expressions** to symbolic name and from symbolic names to predicate registers. At each compare operation, the right-hand side is **reduced** by normalizing the compare condition and **replacing** predicate **operands** with their symbolic name.

The scanner 301 scans the code in the SSA form by running a lookup(underscore)AND(underscore) **string** routine, a scan(underscore)ops routine, and a lookup(underscore)OR(underscore) **string** routine. Figures 11A through 11C show these routines for scanning a predicate block to extract local relations. Alternatively, these routines can be written in other forms.

The main routine is the scan(underscore)ops, which **iterates** over compare-to-predicate operations in the predicate block. As each compare operation is visited, the right-hand side compare operation and guarding predicate is normalized into a **string** that serves as a hash key. The lookup(underscore)AND(underscore) **string** and lookup(underscore)OR(underscore) **string** routines process keys from unconditional and or-style compare-to-predicate operations, respectively. Both routines return a symbolic name corresponding to the predicate variable computed...

10/3,K/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00743995
Detection of modifications in computer programs
Erkennung von Rechnerprogrammanderungen
Detection de modifications dans des programmes d'ordinateur

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LEGAL REPRESENTATIVE:
Watts, Christopher Malcolm Kelway, Dr. et al (37391), AT&T (UK) Ltd. 5, Mornington Road, Woodford Green Essex, IG8 0TU, (GB)
PATENT (CC, No, Kind, Date): EP 702299 A1 960320 (Basic)
APPLICATION (CC, No, Date): EP 95306217 950906;
PRIORITY (CC, No, Date): US 308039 940916
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: **G06F-011/00**
ABSTRACT WORD COUNT: 80

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	276
SPEC A	(English)	EPAB96	4676
Total word count - document A			4952
Total word count - document B			0
Total word count - documents A + B			4952

INTERNATIONAL PATENT CLASS: **G06F-011/00**

...SPECIFICATION Formula omitted) (Formula omitted)
In Procedure 4, "r" does depend on "u".
Thus, in applying composition, one first composes a pair of the earliest-executed **statements** (S1 and S2 in this example). Further, the composition is done in the order stated in Rule 1, wherein S refers to the earlier statement...

...rules, the composition of the dependencies of S1 and S2, namely, the set (Formula omitted)
is composed with the set of dependencies of S3. The **expression** is ((a, VAL1), (b, VAL2)) o ((c, VAL3))

which **reduces** to (Formula omitted)
Finally, this result is composed with the last dependency, that of S4. The **expression** is (Formula omitted)
which **reduces** to (Formula omitted)
Therefore, the set of dependencies obtained from **statements** S1 through S4 is this: (Formula omitted)
This agrees with common-sense: in looking at S1 through S4, one sees that "a" depends on VAL1...

...the statements. In this example, the union is the following: (Formula omitted)

Obtaining Dependencies and Modifications S5 : The IF - Statement
Rule 2 is used, and **repeated** here: (Formula omitted)
Rule 2 is applied to Statement S5, which is also **repeated** : (see image in original document)
In applying Rule 2 to S5, one proceeds through the following steps. (see image in original document)
Step A **substitutes** the IF- **statement** of S5 for the operand of D in Rule 2. In S5, "(c > d)" is the CONDITION of Rule 2.
Step B takes **expressions** from S5 and **substitutes** them for the **variables** S, T, and CONDITION in Rule 2.
Step C is a simplification of line B.
Step D is a simplification of line C, and provides...

...is clearly dependent upon all of a, b, c, and d, as stated in Step D.

Modifiable Variables in S5
Rule 5 applies to IF- **statements** , and is repeated here:

Rule 5 M(S;T) = M(S) U M(T)

The IF- **statement** , S5, is repeated also: (see image in original document)

In applying Rule 5 to S5, one proceeds through the following steps. (see image in original document)

Step E replaces the operand of M with the IF- **statement** .

Step F takes **expressions** from S5 and substitutes them into Rule 4.

Step G is a simplification of line F, through applying RULE ZERO.

Step H is a simplification...

10/3,K/5 (Item 5 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

00557758

MULTILANGUAGE OPTIMIZING COMPILER USING TEMPLATES IN MULTIPLE PASS CODE GENERATION

MEHRSPRACHEN OPTIMIERENDER COMPILER MIT SCHABLONEN ZUR ERZEUGUNG EINES MEHRFACHCODES

PROGRAMME COMPILATEUR D'OPTIMISATION MULTILANGAGE METTANT EN OEUVRE DES GABARITS POUR L'ELABORATION D'UN CODE DE PASSE MULTIPLE

PATENT ASSIGNEE:
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HOBBS, Steven, O., 10 Butternut Road, Westford, MA 01886, (US)
MURPHY, Dennis, Joseph, 86 Depot Road, Westford, MA 01886, (US)

LEGAL REPRESENTATIVE:
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PATENT (CC, No, Kind, Date): EP 529049 A1 930303 (Basic)
EP 529049 B1 980429
WO 9215943 920917

APPLICATION (CC, No, Date): EP 92907267 920218; WO 92US1284 920218

PRIORITY (CC, No, Date): US 662461 910227; US 662725 910227; US 662477 910227; US 662483 910227; US 662464 910227

DESIGNATED STATES: BE; CH; DE; ES; FR; GB; IT; LI; NL; SE

INTERNATIONAL PATENT CLASS: **G06F-009/45**

NOTE:
No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9818	1249
CLAIMS B	(German)	9818	1167
CLAIMS B	(French)	9818	1415
SPEC B	(English)	9818	28814
Total word count - document A			0
Total word count - document B			32645
Total word count - documents A + B			32645

INTERNATIONAL PATENT CLASS: **G06F-009/45**

...SPECIFICATION A trip is "complete" if it flows back to the loop top. For example, the following code illustrates an induction variable V:

In the compile **function** , in addition to finding induction variables, we are also interested in inductive expressions. Inductive expressions are expressions that can computed as linear **functions** of induction variables.

Consider the following program: The **expressions** "I * 8," "I - 4," "T" and "T * 4" are all inductive **expressions** in that they can be recomputed as linear **functions** of I.

As a brief illustration of some of the optimizations based on induction

variables, consider the following program example: This is a straightforward DO loop, I being the loop control variable. Notice that the inductive **expression** I * 4 increases by 4 on each trip through the loop. By introducing a new **variable** , I2, we can **replace** the multiplication with an addition, which is a less expensive operation. This is optimization known as strength reduction, used in optimizing compilers for a long...

...eliminate the original loop control variable completely by recasting the uses of I to be in terms of I2: This optimization is known as induction **variable** elimination.

These optimizations (strength **reduction** and induction **variable** elimination) operate directly on induction **variables** . In addition to these optimizations, induction variable detection provides information to other optimizations such as auto-inc/dec, vectorization, loop unrolling, etc.

In the model...

...compiler of Fig. 1, induction variables may be incremented more than once during the loop. Furthermore, the number of changes can even differ with each **iteration** . In fact, the number of changes can be zero for a particular **iteration** . The loop invariant increment value may differ between individual stores, but each individual store must increment the variable by the same amount whenever it is executed.

There are several different categories of inductive variables, with different properties, including basic induction variables, inductive **expressions** , and pseudo induction variables.

Basic induction variables are the simplest form of induction variable. They have known properties that apply throughout the loop. All other induction variables and **expressions** are always built up as linear **functions** of a basic induction variables. Basic induction variables are generally modified in the form I = I + q or I = I - q where "q" is loop ...

10/3,K/19 **(Item 11 from file: 349)**

00772903 **Image available**

CUT AND PASTE DOCUMENT SUMMARIZATION SYSTEM AND METHOD

CREATION DE RESUMES DE DOCUMENTS PAR COUPER-COLLER ET PROCEDE CORRESPONDANT

Patent Applicant/Assignee:
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Patent Applicant/Inventor:
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JING Hongyan, 521 West 112th Street, Apt. 73C, New York, NY 10025, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
TANG Henry, Baker & Botts LLP, 30 Rockefeller Plaza, New York, NY 10112-0228, US

Patent and Priority Information (Country, Number, Date):
Patent: WO 200106408 A1 20010125 (WO 0106408)
Application: WO 2000US4505 20000222 (PCT/WO US0004505)
Priority Application: US 99120657 19990219
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English

Fulltext Word Count: 6669

Main International Patent Class: **G06F-017/27**
Fulltext Availability:
Detailed Description

Detailed Description
... processing on that branch of the tree terminates.

For the child nodes which are retained, the lower levels of the parse tree are evaluated by **repeating** this process in a similar manner through the tree. The reduction 1 5 operation step 230 is complete when there are no more nodes to consider. This also concludes processing of the **sentence reduction** module and results in the parse trees being marked with those components which can be removed or altered by the subsequent paste module 150 operation.

Following processing by the **sentence reduction** module 135, processing by the **sentence** combination module 140 is perfori-ned. The operation of the sentence combination module 140 is further illustrated in the flow chart of Figure 4.

Using...

...sentence combination operations (step 41 0). Figure 5 is a table illustrating combination operations such as: add descriptions 5 1 0, aggregations 5 1 5, **substitute** incoherent **phrases** 520, **substitute phrases** with more general or more specific information 525 and mixed operations 530.

From the sentence combination subcorpus 165b, sentence combination rules are also established to combination subcorpus 165b. Using the input article 105 and the extracted **sentences reduced** by the **sentence reduction** module 135 the **sentence** combination module 140 in cooperation with the co-reference resolution module 190 applies the sentence combination rules 420 (step 425). The result of step 425...

...module 140 perfonns a paste operation on the marked parse trees and generates a summary sentence.

The document summary is generated by combining the summary **sentences** . The most straight forward combination is to maintain the order of **sentences** as they were extracted, however, other sequencing arrangements can also be employed.

As noted above in connection with Figure 1, the corpus decomposition module 185...

10/3,K/20 **(Item 12 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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PHRASE-BASED DIALOGUE MODELING WITH PARTICULAR APPLICATION TO CREATING RECOGNITION GRAMMARS FOR VOICE-CONTROLLED USER INTERFACES
MODELISATION DE DIALOGUE A BASE DE LOCUTION CONVENANT PARTICULIEREMENT POUR LA CREATION DE GRAMMAIRES DE RECONNAISSANCE DESTINEES A DES INTERFACES UTILISATEURS A COMMANDE VOCALE
Patent Applicant/Assignee:
SEHDA INC, 1040 Noel Drive, Suite 100, Menlo Park, CA 94025, US, US (Residence), — (Nationality)
Inventor(s):
EHSANI Farzad, Menlo Park, CA, US
KNODT Eva M, La Honda, CA, US
Legal Representative:
GRAHAM David R, 1337 Chewpon Avenue, Milpitas, CA 95035, US

Patent and Priority Information (Country, Number, Date):
Patent: WO 200073936 A1 20001207 (WO 0073936)
Application: WO 2000US14961 20000527 (PCT/WO US0014961)
Priority Application: US 99136970 19990528
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK
DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK
LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 14420

Main International Patent Class: **G06F-017/21**
Fulltext Availability:
Detailed Description

Detailed Description
... replacing direct communicationsl,[between people] - 9
between people] [<s>] - 8
[communication between people] [<s>1 - 9
Given these log probabilities, we can calculate the best **phrase** -based parse through a sentence by multiplying the probabilities (or summing the log probabilities) of each of the bigrams for each possible parse.
1 5...the seed dictionary. In the above example, parse2 would be selected as the optimal parse.

2. We pick the parse that minimizes the number of **phrases** for each parse. Assuming that neither the **phrase** "is replacing direct communications" (because it is not a very common **phrase**) nor the word "direct" are in the seed dictionary, parse 1 would be selected.

Applying either one or both of these algorithms will
10 result in an initial **phrase** -based parse of our corpus.

optimizing the **phrase** -based n-gram parse
Once we have an initial parse through our corpus, we divide the corpus into two sub-corpora of equal size, C1 and C2 and use the seed dictionary of **phrases** (described in
15 section 1 b - d) to build an initial language model for one of the sub-corpora. We then use this language model to generate an improved segmentation of the other sub-corpus C2.

Resulting high-frequency bigrams and trigrams are **phrase** candidates that can be added to the dictionary for improved
20 segmentation.

A significant advantage of using a language modeling technique to iteratively refine corpus segmentation is that this technique allows us to identify new **phrases** and collocations and thereby enlarge our initial **phrase**
25 dictionary. A language model based corpus segmentation assigns probabilities not only to **phrases** contained in the dictionary, but to unseen **phrases** as well (**phrases** not included in the dictionary). Recurring unseen **phrases** encountered in the parses with the highest unigram
30 probability score are likely to be significant fixed **phrases** rather than just random **word sequences** . By keeping track of unseen phrases and selecting recurring phrases with the highest unigram probabilities, we identify new collocations
- 26 that can be added to...

10/3,K/25 (Item 17 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00275209 **Image available**
DATA COMPRESSION AND DECOMPRESSION
COMPRESSION ET DECOMPRESSION DE DONNEES
Patent Applicant/Assignee:
LEWIS Adrian Stafford,
KNOWLES Gregory Percy,
Inventor(s):
LEWIS Adrian Stafford,
KNOWLES Gregory Percy,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9423385 A2 19941013
Application: WO 94GB677 19940330 (PCT/WO GB9400677)
Priority Application: US 93301 19930330; US 93747 19930730
Designated States: AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB HU JP KP KR KZ LK LU LV MG MN MW NL NO NZ PL PT RO RU SD SE SI SK TT UA UZ VN AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 140005

Main International Patent Class: **G06F-015/332**
Fulltext Availability:
Detailed Description

Detailed Description
... Similarly, decoded high
and low frequency components can be recombined into the
original image data values by recombining in two
dimensions.

To achieve even greater **compression** , the low
frequency component may itself be filtered into its high
and low frequency components before encoding. Similarly,
the low frequency component of the low frequency component
may also be refiltered, This process of recursive
25 filtering may be **repeated** a number of times. Whether or
not recursive filtering is performed, the filtered image
data is said to have been "transformed" into the high and...

10/3,K/26 (Item 18 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00200164 **Image available**
ELECTRONIC SYSTEM FOR CLASSIFYING OBJECTS
SYSTEME ELECTRONIQUE DE CLASSIFICATION D'OBJETS
Patent Applicant/Assignee:
IMPACQ TECHNOLOGIES INC,
GRANT Paul Ainsworth,
BELILOVE James Robert,
GLOVER David Eugene,
HEKKER Roeland Michael Theodorus,
WRATHALL Edward,
BUCK Robert David,
Inventor(s):
BELILOVE James Robert,
GLOVER David Eugene,
HEKKER Roeland Michael Theodorus,
WRATHALL Edward,
BUCK Robert David,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9117525 A1 19911114

Application: WO 91AU183 19910430 (PCT/WO AU9100183)
Priority Application: AU 909913 19900430
Designated States: AT AT AU BB BE BF BG BJ BR CA CF CG CH CH CI CM DE DE DK DK ES ES FI FR GA GB GB GR HU IT JP KP KR LK LU LU MC MG ML MR MW NL NL NO RO SD SE SE SN SU TD TG US
Publication Language: English
Fulltext Word Count: 5547

International Patent Class: **G06F**
Fulltext Availability:
Detailed Description

Detailed Description
... indicative of the quality of the match attained between said classifications, and control means for receiving the output of said comparator means and adapted to **iteratively** adjust system parameters to successively improve said match 0 attained between the predetermined and the assessed classes of the objects
upon **repeated** assessment of the classification of the same objects, whereby the system is thereby set-up for the classification of similar objects of unknown classification. The control means may also be adapted to **iteratively** adjust
SUBSTITUTE SHEET
the system **parameters** to **minimise** the time taken to assess the classification of the objects, given that an acceptable level of class-match to be achieved is specified, or is...

...to assess the classification of the respective sub-set objects,
determining the match between the assessed and the predetermined classification of the sub-set objects,
iteratively adjusting system parameters to improve the match between the as
sessed and the predetermined classification of the sub-set objects upon repetition of the preceding...

...signatures; and, 2 5 adopting efficient discrimination strategies for comparing object and class signatures to assess the class of the object. Preferably, all these optimisation **functions** are performed adaptively so that the system can be rapidly trained to discriminate between different classes of similar objects and so that the speed and...

10/3,K/27 (Item 19 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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[illegible]04
DATA COMPRESSION
COMPRESSION DE DONNEES
Patent Applicant/Assignee:
BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY,
CLARK Alan Douglas,
Inventor(s):
CLARK Alan Douglas,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9006560 A1 19900614
Application: WO 89GB1469 19891208 (PCT/WO GB8901469)
Priority Application: GB 8828796 19881209
Designated States: JP US
Publication Language: English
Fulltext Word Count: 3567

Main International Patent Class: **G06F-015/401**
Fulltext Availability:
Detailed Description

Detailed Description

... and
transmits the index number of the dictionary entry. The decoder receives the index number, looks up the entry in its dictionary, and recovers the **string** .

The most complex part of this process is the strin' matching or
9
parsing performed by the encoder, as this necessitates searching through a potentially...

...the additional character c may be added to the dictionary and linked to entry S. By this means, the dictionary above would now contain the **string** "the 11, and would achieve improved **compression** the next time the **string** is encountered, The two pass form of the Mayne algorithm operates in the following ways:

a) Dictionary construction
Find the longest string of input symbols that matches a dictionary entry., call this the prefix string. **Repeat** the process and call this second matched string the suffix string. Append the suffix string to the prefix string,, and add it to the dictionary. This process is **repeated** until the entire input data streeam has been read, Each dictionary entry has an associated frequency count,, which is incremented whenever it is used. When the encoder runs out of storage space it finds the least frequently used dictionary entry and re uses it for the new **string** .

SUBSTITUTE SHEET
(b) Encoding
The process of finding the longest **string** of input symbols that matches a dictionary entry is **repeated** , however when a match is found the index of the dictionary entry is transmitted. In the two pass scheme the dictionary is not modified during encoding.

To make the Mayne algorithm single pass during the dictionary update process, after each **string** matching process the index for the corresponding dictionary entry is transmitted,
With small dictionaries experience has shown that appending the complete **string** causes the dictionary to fill with long **strings** which may not suit the data characteristics well. With large dictionaries (say 4096+ entries) this is not likely to be the case, By appending the first two characters of the second **string** to the first, performance is improved considerably, The dictionary update process is modified to append two characters if the suffix **string** is 2 or more characters in length, or one character if the suffix **string** is of length 1.

SUBSTITUTE SHEET
match(entry, input stream, ch=cter)
string character
entry ordinal value of character
do(
read next character from input stream and append to string
search dictionary for extended string
if extended string...

```
File 348:EUROPEAN PATENTS 1978-2004/Feb W01
         (c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040205,UT=20040129
         (c) 2004 WIPO/Univentio

Set     Items   Description
S1     141302   CHARACTER? ? OR TOKEN? ? OR SUBSTRING? OR SUBSEQUENCE? ?
S2    1118543   PARAMETER? ? OR VARIABLE? ? OR NAME OR NAMES OR FILENAME? ?
               OR NUMBER? ? OR ALPHABET?? ? OR NUMERIC?? ? OR ALPHANUMERIC?
               OR DIGIT? ? OR INTEGER? ?
S3       1244   S1:S2(3N)COMPIL??? ?
S4     123743   S1:S2(3N)(SUBSTITUT? OR REPLAC??? ? OR REPLACEMENT? OR CHA-
               NG??? ? OR ALTERNATIVE? OR SWAP???? ? OR TRANSLAT? OR SHUFFL?-
               ?? ? OR MORPH??? ?)
S5      98839   S1:S2(3N)(CONFIGUR? OR RECONFIGUR? OR ADAPT??? ? OR CONVER-
               T? OR CONVERSION? OR TRANSFORM? OR TRANSMUT? OR TRANSPOS? OR -
               EXCHANG??? ?)
S6      55844   S1:S2(3N)(MODIFIE? ? OR MODIFY? OR MODIFICATION? OR ALTER?-
               ?? ? OR ALTERATION? OR ALTERRING? OR SWITCH??? ? OR EDIT??? ?
               OR REDEFIN? OR REASSIGN?)
S7     145655   EXPRESSION?
S8      18250   S7(3N)(REDN? ? OR REDUC????? ? OR CONDENS??? ? OR COMPACT?
               OR COMPRESS? OR SHRINK? OR DECREAS? OR DECREMENT? OR SHRUNK? -
               OR DIMINISH?)
S9       1949   S7(3N)(TRIM? ? OR TRIMMED OR TRIMMING OR PRUN??? ? OR SHOR-
               T? OR MINIMI?)
S10     87360   (SINGLE OR ONE OR SOLITARY OR SOLE)(2W)S1:S2
S11       182   S3:S6(25N)S8:S9
S12         3   S11(25N)S10
S13         8   S11/TI,AB,CM
S14         7   S13 NOT S12
S15     10308   IC='G06F-009/40':IC='G06F-009/48'
S16         1   S11 AND S15
S17         8   (S13:S14 OR S16) NOT S12
S18         8   IDPAT (sorted in duplicate/non-duplicate order)
S19         8   IDPAT (primary/non-duplicate records only)
S20         0   S11(25N)(SYNTAX? OR SYNTACT? OR COMPIL???? ?)
```

12/5,K/3 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00234265 **Image available**
SYSTEM FOR DIVIDING PROCESSING TASKS INTO SIGNAL PROCESSOR AND DECISION-MAKING MICROPROCESSOR INTERFACING
SYSTEME DE SEPARATION DES TACHES DE TRAITEMENT EN TACHES POUR INTERFACAGE AVEC UN PROCESSEUR DE SIGNAUX ET UN MICROPROCESSEUR DE PRISE DE DECISION
Patent Applicant/Assignee:
STAR SEMICONDUCTOR CORPORATION,
Inventor(s):
ROBINSON Jeffrey I,
ROUSE Keith,
KRASSOWSKI Andrew J,
MONTLICK Terry F,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9308524 A1 19930429
Application: WO 92US8954 19921014 (PCT/WO US9208954)
Priority Application: US 91776161 19911015
Designated States: AU CA JP KR AT BE CH DE DK ES FR GB GR IE IT LU MC NL SE
Main International Patent Class: G06F-009/00
International Patent Class: G06F-09:40
Publication Language: English
Fulltext Availability:
Detailed Description
Claims
Fulltext Word Count: 219172

English Abstract
Architectures and methods are provided for efficiently dividing a processing task into tasks for a programmable real time signal processor (SPROC) (10) and tasks for a decision-making microprocessor (2120). The SPROC is provided with a non-interrupt structure where data flow is through a multiported central memory. The SPROC is also programmed in an environment which requires nothing more than graphic entry of a block diagram of the user's design. In automatically implementing the block diagram into silicon, the SPROC programming/development environment accounts for and provides software connection and interfaces with a host microprocessor (2120). The programming environment preferably includes: a high-level computer screen entry system which permits choosing, entry, parameterization, and connection of a plurality of functional blocks; a functional block cell library (2015) which provides source code representing the functional blocks; and a signal processor scheduler/compiler (2040) which uses the functional block cell library (2015) and the information entered into the high-level entry system to compile a program and to output source program code for a program memory and source data code for the data memory of the SPROC, as well as a symbol table which provides a memory map which maps SPROC addresses to variable names which the microprocessor (2120) will refer to in separately compiling its program.

French Abstract
On decrit des architectures et procedes qui permettent de separer efficacement une tache de traitement en taches destinees a un processeur de signaux programmable fonctionnant en temps reel (SPROC)(10) et a un microprocesseur de prise de decision (2120). Le SPROC est dote d'une structure depourvue d'interruption ou le flux de donnees arrive par l'intermediaire d'une memoire centrale a ports multiples. Il est aussi

programme dans un environnement n'exigeant rien d'autre que l'introduction graphique d'un schema global relatif aux intentions de l'utilisateur. Avec la realisation automatique du schema global dans le silicium, l'environnement de programmation et de developpement du SPROC prend en compte et fournit la connexion au logiciel et realise une interface avec un microprocesseur hote (2120). Cet environnement de programmation comporte de preference un systeme d'introduction a ecran d'affichage perfectionne qui permet de choisir, introduire, parametriser et fournit une connexion avec differents blocs fonctionnels; une bibliotheque a cellules de bloc fonctionnel (2015) qui fournit un code source representant les blocs fonctionnels; et un programmateur/compileur pour processeur de signal (2040). Ce dernier utilise la bibliotheque a cellules (2015) et l'information introduite dans le systeme d'introduction perfectionne pour compiler un programme et delivrer en sortie un code de programme source concernant une memoire du programme et un code de donnees source destine a la memoire de donnees du SPROC, ainsi qu'une table de symboles qu fournit une cartographie memorisee, contenant les adresses donnees par le SPROC aux differents noms auxquels le microprocesseur (2120) viendra se referer en compilant separement son propre programme.

Fulltext Availability:
Claims

Claim
... to enter SDI commands. The SDI user interface supports the entry of multiple commands on **one** command line, the use of command files, and the use of function keys as **shortcuts** for entering some commands. One can specify definitions for most function keys, and some function...

19/5,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01264993
A method for translating a source operation to a target operation, and computer program for the method
Verfahren zum Ubersetzen eines Quellbefehls in einen Zielbefehl und Rechnerprogramm fur das Verfahren
Methode pour traduire une operation source en une operation cible et programme d'ordinateur pour la methode
PATENT ASSIGNEE:
SHARP KABUSHIKI KAISHA, (260716), 22-22 Nagaike-cho Abeno-ku, Osaka 545-8522, (JP), (Applicant designated States: all)
INVENTOR:
Zammit, Vincent, 1A Beauchamp Lane, Cowley, Oxford OX4 3LF, (GB)
Kay, Andrew, 99 Hurst Street, Oxford OX4 1HA, (GB)
LEGAL REPRESENTATIVE:
Robinson, John Stuart (41354), Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford OX4 2RU, (GB)
PATENT (CC, No, Kind, Date): EP 1091292 A2 010411 (Basic)
APPLICATION (CC, No, Date): EP 308712 001004;
PRIORITY (CC, No, Date): GB 9923379 991005
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: **G06F-009/45**

ABSTRACT EP 1091292 A2
A method is provided for translating a source operation to a target operation 4. The source operation acts on one or more source operands, each comprising a binary integer of a first bit-width. The target operation is required to be evaluated by a processor, such as a computer, which performs integer operations on binary integers of a second bit-width which is greater than first bit-width. The source operation 1 is translated to a target operation having at least one target operand. Steps 3 and 5 identify whether the value of unused bits of the or each target operand affects the value of the target operation and whether the target operand or any of the target operands is capable of having one or more unused bits of inappropriate value. If so, a correcting operation is added 6 to the target operation for correcting the value of each of the bits of inappropriate value before performing the target operation.
ABSTRACT WORD COUNT: 158
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 010411 A2 Published application without search report
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200115	393
SPEC A	(English)	200115	9399
Total word count - document A			9792
Total word count - document B			0
Total word count - documents A + B			9792

INTERNATIONAL PATENT CLASS: **G06F-009/45**

...SPECIFICATION expensive than the evaluation of the target expression

represented by t and that, therefore, the **translation** of source **integer** expressions into target integer **expressions** should try to **minimise** the applications of these operations, rather than applying them naively to every sub-expression that...

19/5,K/7 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00507957 **Image available**
ANIMATION ENCODING METHOD AND SYSTEM
PROCEDE ET SYSTEME DE CODAGE D'UNE ANIMATION
Patent Applicant/Assignee:
MESSAGEMEDIA INC,
MEYER Thomas W,
KESSLER Scott D,
NEW Darren H,
Inventor(s):
MEYER Thomas W,
KESSLER Scott D,
NEW Darren H,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9939309 A1 19990805
Application: WO 99US1796 19990127 (PCT/WO US9901796)
Priority Application: US 9817896 19980203
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: G06T-015/70
Publication Language: English
Fulltext Availability:
Detailed Description
Claims
Fulltext Word Count: 17545

English Abstract
A system and method for efficiently coding an animation sequence, converts a series of opcodes and associated opcode parameters into an array of integers. The array of **integers** is **converting** into an **alphanumeric** representation which is coded. The alphanumeric **expression** can also be **compressed** as well as encoded. the array of integers can be created by representing each opcode with an integer value, determining a number of parameters associated with each opcode, and creating an array of integers which includes, for each opcode, that opcode's integer value, followed by the number of parameters associated with that opcode, followed by said parameters associated with said opcode.

French Abstract
On decrit un systeme et un procede de codage efficace d'une sequence d'animation, qui convertissent une serie de codes d'operation et de parametres de codes d'operation associes en un tableau de nombres entiers, lequel est converti en une representation alphanumerique codee. L'expression alphanumerique peut egalement etre comprimee ou codee. Le tableau de nombres entiers peut etre cree par representation de chaque code d'operation par une valeur entiere, par determination d'un certain nombre de parametres associes a chaque code d'operation, et par creation

d'un tableau de nombres entiers incluant, pour chaque code d'operation, ladite valeur entiere du code d'operation, suivie du nombre de parametres associes audit code d'operation, suivie desdits parametres associes audit code d'operation.

English Abstract

...series of opcodes and associated opcode parameters into an array of integers. The array of **integers** is **converting** into an **alphanumeric** representation which is coded. The alphanumeric **expression** can also be **compressed** as well as encoded. the array of integers can be created by representing each opcode...

?

File 347:JAPIO Oct 1976-2003/Oct(Updated 040202)
(c) 2004 JPO & JAPIO
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200409
(c) 2004 Thomson Derwent

Set	Items	Description
S1	183211	CHARACTER? ? OR TOKEN? ? OR SUBSTRING? OR SUBSEQUENCE? ?
S2	2101856	PARAMETER? ? OR VARIABLE? ? OR NAME OR NAMES OR FILENAME? ? OR NUMBER? ? OR ALPHABET?? ? OR NUMERIC?? ? OR ALPHANUMERIC? OR DIGIT? ? OR INTEGER? ?
S3	414	S1:S2(3N)COMPIL??? ?
S4	46624	S1:S2(3N)(SUBSTITUT? OR REPLAC??? ? OR REPLACEMENT? OR CHANG??? ? OR ALTERNATIVE? OR SWAP???? ? OR TRANSLAT? OR SHUFFL???? ? OR MORPH??? ?)
S5	56377	S1:S2(3N)(CONFIGUR? OR RECONFIGUR? OR ADAPT??? ? OR CONVERT? OR CONVERSION? OR TRANSFORM? OR TRANSMUT? OR TRANSPOS? OR EXCHANG??? ?)
S6	37072	S1:S2(3N)(MODIFIE? ? OR MODIFY? OR MODIFICATION? OR ALTER??? ? OR ALTERATION? OR ALTERRING? OR SWITCH??? ? OR EDIT??? ? OR REDEFIN? OR REASSIGN?)
S7	88404	EXPRESSION?
S8	3230	S7(3N)(REDN? ? OR REDUC????? ? OR CONDENS??? ? OR COMPACT? OR COMPRESS? OR SHRINK? OR DECREAS? OR DECREMENT? OR SHRUNK? OR DIMINISH?)
S9	150	S7(3N)(TRIM? ? OR TRIMMED OR TRIMMING OR PRUN??? ? OR SHORT? OR MINIMI?)
S10	34841	(SINGLE OR ONE OR SOLITARY OR SOLE)(2W)S1:S2
S11	49	S3:S6 AND S8:S9
S12	2	S11 AND S10
S13	1	S11 AND (SYNTAX? OR SYNTACT? OR COMPIL???? ?)
S14	38323	IC='G06F-009/40':IC='G06F-009/455'
S15	68	MC='T01-G06A'
S16	4911	MC='T01-F05A'
S17	918	MC='T01-J20'
S18	1845	MC='T01-S01C'
S19	63336	MC='T01-S03'
S20	1493	MC='T01-J20A'
S21	3062	MC='T01-J04A'
S22	8	S11 AND S14:S21
S23	8	S12:S13 OR S22
S24	8	IDPAT (sorted in duplicate/non-duplicate order)
S25	8	IDPAT (primary/non-duplicate records only)

25/9/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015553351 **Image available**
WPI Acc No: 2003-615506/200358
XRPX Acc No: N03-490108
Checking method for units or dimensions used in computer program, involves replacing **function** parameters **, constants and variables with strings from user-supplied precompiler directives**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BERA R K
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6578196	B1	20030610	US 2000589394	A	20000607	200358	B

Priority Applications (No Type Date): US 2000589394 A 20000607

Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 6578196 B1 11 G06F-009/45

Abstract (Basic): US 6578196 B1
NOVELTY - A set of user-supplied precompiler directives is added to a computer program to be checked. The functions, function parameters, constants and variables used in the program are replaced with strings from precompiler directives. The resulting **expressions** are **reduced** based on specific simplifying rules. The **reduced expressions** are checked for unit or dimensional homogeneity based on predetermined conditions.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for checking unit or dimensional homogeneity in computer program.
USE - For checking correctness and consistency of units and dimensions e.g. meters, seconds, cubic meters, inches, kilograms, meters per seconds, of variables and constants used in algebraic expressions used in computer programs.
ADVANTAGE - Checks the correctness and consistency of units and dimensions of variables and constants used in expressions of computer program effectively.
DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining the unit or dimensional homogeneity checking process.
pp; 11 DwgNo 2A/2
Title Terms: CHECK; METHOD; UNIT; DIMENSION; COMPUTER; PROGRAM; REPLACE; FUNCTION; PARAMETER; CONSTANT; VARIABLE; STRING; USER; SUPPLY; DIRECT
Derwent Class: T01
International Patent Class (Main): **G06F-009/45**
File Segment: EPI
Manual Codes (EPI/S-X): **T01-F05A** ; **T01-J04A** ; **T01-S03**

25/9/4 (Item 4 from file: 350)

014834761 **Image available**
WPI Acc No: 2002-655467/200270
Related WPI Acc No: 2002-489601
XRPX Acc No: N02-517954
Computer program verification condition generation involves providing label at control joint point to value of variable **that is** modified **on conditional program execution paths while applying pre-condition operator to program**
Patent Assignee: DETLEFS D L (DETL-I); NELSON C G (NELS-I); SAXE J B (SAXE-I); HEWLETT-PACKARD DEV CO LP (HEWP)
Inventor: DETLEFS D L; NELSON C G; SAXE J B
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020083418	A1	20020627	US 2000218305	P	20000714	200270	B
			US 2001907327	A	20010716		
US 6553362	B2	20030422	US 2000218305	P	20000714	200330	
			US 2001907327	A	20010716		

Priority Applications (No Type Date): US 2000218305 P 20000714; US 2001907327 A 20010716
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes

US 20020083418 A1 25 G06F-009/44 Provisional application US 2000218305

US 6553362 B2 G06N-005/00 Provisional application US 2000218305

Abstract (Basic): US 20020083418 A1
NOVELTY - A weakest pre-condition operator computed by strongest post-condition operator is applied to computer program to produce verification condition (VC) which includes a single instance of a sub-expression derived from expression following a control joint point. A label is provided at control joint point to a value of **variable** that is **modified** on conditional program execution paths, while applying pre-condition operator to program.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:
(1) Computer readable medium storing verification condition generation program; and
(2) Computer program verification condition generation apparatus.
USE - For generating verification condition for computer program.
ADVANTAGE - As labels are introduced for the values of variable at control joint points, duplication in the verification condition of the sub-expressions derived from the expression following the control joint point, is avoided. Repeated evaluation of various sub- **expressions** is eliminated or **reduced** , thereby providing simpler and easier verification condition generation process.
DESCRIPTION OF DRAWING(S) - The figure shows the flowchart illustrating computer program verification condition generation process.
pp; 25 DwgNo 2/5
Title Terms: COMPUTER; PROGRAM; VERIFICATION; CONDITION; GENERATE; LABEL; CONTROL; JOINT; POINT; VALUE; VARIABLE; MODIFIED; CONDITION; PROGRAM; EXECUTE; PATH; APPLY; PRE; CONDITION; OPERATE; PROGRAM
Derwent Class: T01
International Patent Class (Main): **G06F-009/44** ; G06N-005/00
File Segment: EPI
Manual Codes (EPI/S-X): T01-J04; T01-J15B; **T01-J20A** ; **T01-S03**

25/9/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013882661 **Image available**
WPI Acc No: 2001-366873/200138
XRPX Acc No: N01-267686
Determination of syntactic **correctness of expressions used in computer programs, involves iteratively** substituting **specific** characters **in** character **string of** expression **until** expression **is** reduced **to** single character
Patent Assignee: BERA R K (BERA-I)
Inventor: BERA R K
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20010003210	A1	20010607	US 2000727846	A	20001201	200138	B

Priority Applications (No Type Date): JP 99342659 A 19991201
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010003210	A1		7	G06F-009/44	

Abstract (Basic): US 20010003210 A1

NOVELTY - A string of characters is created from the expression. Specific characters included in the string and also in predetermined list are iteratively **substituted** with **characters** in another list, until the **expression** is **reduced** into a **single** predetermined **character** . If the **expression** is **reduced** into **single** preset **character** , the expression is determined to be **syntactically** correct.

DETAILED DESCRIPTION - Character not included in the string are **substituted** with special **character** from the other list, that causes the iteration to be stopped. An INDEPENDENT CLAIM is also included for computer program product.

USE - For determining **syntactic** correctness of algebraic expression used in computer programs.

ADVANTAGE - Since the metal does not rely upon operator operand tokens, but character combination in the character string, the **syntactic** correctness of all type of expressions can be determined.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining **syntactic** correctness determining method.

pp; 7 DwgNo 1/1

Title Terms: DETERMINE; **SYNTACTIC** ; CORRECT; EXPRESS; COMPUTER; PROGRAM; ITERATIVE; SUBSTITUTE; SPECIFIC; CHARACTER; CHARACTER; STRING; EXPRESS; EXPRESS; REDUCE; SINGLE; CHARACTER

Derwent Class: T01

International Patent Class (Main): **G06F-009/44**

File Segment: EPI

Manual Codes (EPI/S-X): **T01-F05A** ; **T01-J20** ; **T01-S01C** ; **T01-S03**

25/9/6 (Item 6 from file: 350)

012652880 **Image available**

WPI Acc No: 1999-458985/199938

XRPX Acc No: N99-343333

Animation encoding method for series of opcodes representing scene graph for handling animated scenes in extensible environment e.g. on remote computer over Internet

Patent Assignee: MESSAGEMEDIA INC (MESS-N); AMAZING MEDIA INC (AMAZ-N)

Inventor: KESSLER S D; MEYER T W; NEW D H

Number of Countries: 084 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9939309	A1	19990805	WO 99US1796	A	19990127	199938	B
AU 9925651	A	19990816	AU 9925651	A	19990127	200002	
US 6243856	B1	20010605	US 9817896	A	19980203	200133	

Priority Applications (No Type Date): US 9817896 A 19980203

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9939309	A1	E	72	G06T-015/70	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9925651	A		G06T-015/70	Based on patent WO 9939309
US 6243856	B1		G06F-009/45	

Abstract (Basic): WO 9939309 A1

NOVELTY - A series of opcodes representing a scene graph, and associated opcode **parameters** are **converted** into an array of integers. The array of **integers** are **converted** into an **alphanumeric** representation and encoded.

DETAILED DESCRIPTION - The alphanumeric **expression** can be **compressed** as well as encoded. The array of integers can be created by representing each opcode with an integer value, determining a number of parameters associated with each opcode, and creating an array of integers which includes, for each opcode , that opcode's integer value, followed by the number of parameters associated with that opcode, followed by the parameters associated with the opcode. INDEPENDENT CLAIMS are included for; a computer readable medium storing instructions for executing a method of instructions for coding a series of opcodes; a system for implementing a scene graph represented by a series of opcodes.

USE - Efficient handling of animated scenes in an extensible environment.

ADVANTAGE - Enables efficient handling of animated scenes for downloading and execution of animated scenes in interactive manner at user's computer at a remote location e.g. over the Internet. Allows animated sequence to be accessible to broader range of customers or users.

DESCRIPTION OF DRAWING(S) - The drawing shows a flow diagram illustrating the process of providing an animated scene to a user.

pp; 72 DwgNo 1/20

Title Terms: ANIMATED; ENCODE; METHOD; SERIES; REPRESENT; SCENE; GRAPH; HANDLE; ANIMATED; SCENE; EXTEND; ENVIRONMENT; REMOTE; COMPUTER

Derwent Class: T01

International Patent Class (Main): **G06F-009/45** ; G06T-015/70

File Segment: EPI

Manual Codes (EPI/S-X): T01-D02; T01-J10C4; T01-J10C5; T01-J10D; **T01-S03**

25/9/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

007721181

WPI Acc No: 1988-355113/198850

XRPX Acc No: N88-269285

Logic synthesis method using reduced global set of primitives - performing logic redn . **on** expressions **in prefix form obtd. from tokens of parsed register transfer expression**

Patent Assignee: IBM CORP (IBMC)

Inventor: DRUMM A D; SWEET C P

Number of Countries: 004 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 294632	A	19881214	EP 88108139	A	19880520	198850	B
US 5029102	A	19910702	US 8759651	A	19870608	199129	

Priority Applications (No Type Date): US 8759651 A 19870608

Cited Patents: 3.Jnl.Ref; A3...8910; EP 168650; No-SR.Pub

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 294632	A	E	31		

Designated States (Regional): DE FR GB

Abstract (Basic): EP 294632 A

The logic synthesis method involves using a set of register

transfer statements using e.g. very high speed IC (VHSIC) Hardware Description Language with an infix format. After passing and translation into prefix form, the **tokens** are **changed** into **expressions** for logic **reduction** by recursive algorithms involving into a set of logical function blocks, some of which may not be primitive.

A global set of any remaining primitives is reduced to produce a logic model for use in synthesis of the logic circuit by a conventional operation.

USE/ADVANTAGE - In VLSI logic design, fast and efficient method for wide variety of logic circuits generally maintains specified structure, using technology-independent register transfer description

Abstract (Equivalent): US 5029102 A

The logic synthesis method begins with a set of register transfer statements describing the desired logic. These statements are converted to expressions in prefix form. Next, logic reduction is performed on the individual expressions. The modified expressions are then converted to a set of logical function blocks some of which may not be primitive blocks. Logical reduction is performed on the global set of any remaining primitives. The output of the above process is then used to synthesise the logic circuit. Included in the system are novel techniques for performing logic **reduction** on the individual **expressions** . USE - For computer program.

(22pp

Title Terms: LOGIC; SYNTHESIS; METHOD; REDUCE; GLOBE; SET; PERFORMANCE; LOGIC; REDUCE; EXPRESS; PREFIX; FORM; OBTAIN; TOKEN; REGISTER; TRANSFER; EXPRESS

Derwent Class: T01; U21

International Patent Class (Additional): G06F-015/60

File Segment: EPI

Manual Codes (EPI/S-X): T01-J15A1; **T01-J20** ; U21-C03D

25/9/8 (Item 8 from file: 347)

DIALOG(R)File 347:JAPIO

07063016 **Image available**

REDUNDANT EXPRESSION DELETING DEVICE

PUB. NO.: 2001-290654 [JP 2001290654 A]
PUBLISHED: October 19, 2001 (20011019)
INVENTOR(s): SAYAMA JIYUNKO
KOTANI KENSUKE
TANAKA HIROHISA
APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD
APPL. NO.: 2000-104659 [JP 2000104659]
FILED: April 06, 2000 (20000406)
INTL CLASS: **G06F-009/45**

ABSTRACT

PROBLEM TO BE SOLVED: To solve the problem that costs required for evaluating an instruction stream are increased by deleting a redundant **expression** , when a **reduction** variable is assigned to a stack since the redundant expression is deleted, while assuming the reduction **variable** for **replacing** the redundant expression is assigned to a register, when deleting the redundant expression.

SOLUTION: By providing a deletion influence degree analyzing part for analyzing the overlap of survival sections generated in the deletion of the redundant expression, deletion costs are more accurately estimated and on

the basis of the analyzed costs, deletion decision is preformed. Also the deletion block of the redundant expression is divided and by deleting only the block with a little overlap of survival sections, a larger number of redundant expressions are deleted.

?

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File 256:SoftBase:Reviews,Companies&Prods. 82-2004/Jan
         (c)2004 Info.Sources Inc
File   2:INSPEC 1969-2004/Feb W1
         (c) 2004 Institution of Electrical Engineers
File   6:NTIS 1964-2004/Feb W2
         (c) 2004 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1970-2004/Jan W4
         (c) 2004 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2004/Feb W1
         (c) 2004 Inst for Sci Info
File  35:Dissertation Abs Online 1861-2004/Jan
         (c) 2004 ProQuest Info&Learning
File  65:Inside Conferences 1993-2004/Feb W2
         (c) 2004 BLDSC all rts. reserv.
File  94:JICST-EPlus 1985-2004/Feb W1
         (c)2004 Japan Science and Tech Corp(JST)
File  95:TEME-Technology & Management 1989-2004/Jan W4
         (c) 2004 FIZ TECHNIK
File  99:Wilson Appl. Sci & Tech Abs 1983-2004/Jan
         (c) 2004 The HW Wilson Co.
File 111:TGG Natl.Newspaper Index(SM) 1979-2004/Feb 05
         (c) 2004 The Gale Group
File 144:Pascal 1973-2004/Feb W1
         (c) 2004 INIST/CNRS
File 202:Info. Sci. & Tech. Abs. 1966-2004/Jan 20
         (c) 2004 EBSCO Publishing
File 233:Internet & Personal Comp. Abs. 1981-2003/Sep
         (c) 2003 EBSCO Pub.
File 266:FEDRIP 2004/Dec
         Comp & dist by NTIS, Intl Copyright All Rights Res
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group
File 603:Newspaper Abstracts 1984-1988
         (c)2001 ProQuest Info&Learning

Set     Items   Description
S1     422112   CHARACTER? ? OR TOKEN? ? OR SUBSTRING? OR SUBSEQUENCE? ?
S2    8997432   PARAMETER? ? OR VARIABLE? ? OR NAME OR NAMES OR FILENAME? ?
                 OR NUMBER? ? OR ALPHABET?? ? OR NUMERIC?? ? OR ALPHANUMERIC?
                OR DIGIT? ? OR INTEGER? ?
S3       2091   S1:S2(3N)COMPIL??? ?
S4     185544   S1:S2(3N)(SUBSTITUT? OR REPLAC??? ? OR REPLACEMENT? OR CHA-
                NG??? ? OR ALTERNATIVE? OR SWAP???? ? OR TRANSLAT? OR SHUFFL?-
                ?? ? OR MORPH??? ?)
S5     140040   S1:S2(3N)(CONFIGUR? OR RECONFIGUR? OR ADAPT??? ? OR CONVER-
                T? OR CONVERSION? OR TRANSFORM? OR TRANSMUT? OR TRANSPOS? OR -
                EXCHANG??? ?)
S6      70552   S1:S2(3N)(MODIFIE? ? OR MODIFY? OR MODIFICATION? OR ALTER?-
                ?? ? OR ALTERATION? OR ALTERRING? OR SWITCH??? ? OR EDIT??? ?
                OR REDEFIN? OR REASSIGN?)
S7    2006911   EXPRESSION?
S8      58420   S7(3N)(REDN? ? OR REDUC????? ? OR CONDENS??? ? OR COMPACT?
                OR COMPRESS? OR SHRINK? OR DECREAS? OR DECREMENT? OR SHRUNK? -
                OR DIMINISH?)
S9       3413   S7(3N)(TRIM? ? OR TRIMMED OR TRIMMING OR PRUN??? ? OR SHOR-
                T? OR MINIMI?)
S10      4066   (SINGLE OR ONE OR SOLITARY OR SOLE)(2W)S7
S11       573   S3:S6 AND S8:S9
S12     90765   (SINGLE OR ONE OR SOLITARY OR SOLE)(2W)S1:S2
```

S13	7	S11 AND S12
S14	5	S13/2000:2004
S15	2	S13 NOT S14
S16	2	RD (unique items)
S17	39	AU='BERA R'
S18	33	AU='BERA R K'
S19	54	AU='BERA RK'
S20	126	S17:S19
S21	0	S20 AND (SYNTAX? OR SYNTACT? OR S3:S6 OR S8:S9)
S22	1	S11 AND (SYNTAX? OR SYNTACT?)
S23	4	S11 AND COMPIL???? ?
S24	5	S22:S23
S25	3	S24/2000:2004
S26	2	S24 NOT (S25 OR S13)
S27	2	RD (unique items)

16/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02134043 E.I. Monthly No: EIM8611-081202
Title: SIMPLIFIED ANALYTICAL SOLUTIONS AND NUMERICAL COMPUTATION OF ONE AND TWO-DIMENSIONAL CIRCULAR FINS WITH CONTACT CONDUCTANCE AND END COOLING.
Author: Yovanovich, M. M.; Culham, J. R.; Lemczyk, T. F.
Corporate Source: Univ of Waterloo, Waterloo, Ont, Can
Conference Title: AIAA 24th Aerospace Sciences Meeting.
Conference Location: Reno, NV, USA Conference Date: 19860106
E.I. Conference No.: 08356
Source: AIAA Paper Publ by AIAA, New York, NY, USA AIAA-86-0149, 10p
Publication Year: 1986
CODEN: AAPRAQ ISSN: 0146-3705
Language: English

...Abstract: constant cross-section having uniform base, end and side conductances. The solutions are dependent upon **one** geometric **parameter** and three fin parameters which relate the internal conductive resistance to the three boundary resistances...

...the heat flow rate or fin efficiency ratios. Simple polynomials are developed for fast, accurate **numerical** computation of the **modified** Bessel functions which appear in the solutions. For annular fins used in typical micro-electronic applications the analytical **expressions** are also **reduced** to alternate **expressions** which are shown to be expressible by means of simple polynomials which converge to unity...

16/3,K/2 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01379508 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.
NEUROENDOCRINE AND IMMUNE SYSTEMS IN DEPRESSIVE PATIENTS: A FOLLOW-UP STUDY
Original Title: PRUEBAS NEUROENDOCRINAS Y SISTEMA INMUNE EN EL PACIENTE DEPRIMIDO: ESTUDIO EVOLUTIVO

Author: RODRIGUEZ-ROSADO MARTINEZ-ECHEVARRIA, ANA
Degree: DR.
Year: 1993
Corporate Source/Institution: UNIVERSIDAD DE NAVARRA (SPAIN) (5864)
Source: VOLUME 55/04-C OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 1184. 235 PAGES
Location of Reference Copy: FACULTAD DE MEDICINA, UNIVERSIDAD DE NAVARRA, E-31080 PAMPLONA, SPAIN

...the number of monocytes positive for immunoreactive vimentin filaments, a decreased index of phagocytosis and **reduced expression** of HLA DR antigens, while 90% of patients had at least **one** monocyte **parameter altered** . However, when patients were on treatment **alterations** in immune **variables** were associated with increasing HRSD scores (up to 15), while HRSD scores lower than 15...

27/7/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

6233837 INSPEC Abstract Number: C1999-06-6150C-007
Title: Storage assignment using expression tree transformations to generate compact and efficient DSP code
Author(s): Rao, A.; Pande, S.
Author Affiliation: Adv. Technol. Group, Synopsys Inc., Mountain View, CA, USA
Journal: Computer Architecture News vol.27, no.1 p.39-42
Publisher: ACM,
Publication Date: March 1999 Country of Publication: USA
CODEN: CANED2 ISSN: 0163-5964
SICI: 0163-5964(199903)27:1L.39:SAUE;1-Q
Material Identity Number: B580-1999-002
Language: English Document Type: Journal Paper (JP)
Treatment: Applications (A); Practical (P)
Abstract: DSP **compilers** need to perform a careful placement of automatic variables in memory in order to exploit powerful auto-increment/decrement indirect addressing modes and generate compact and efficient code. The storage allocation of variables critically depends on the sequence of variable accesses. In this paper we present techniques to optimize the access sequence of **variables** by applying algebraic **transformations** (commutativity and associativity) on **expression** trees to **minimize** address arithmetic instructions. Based on these techniques, we propose heuristic algorithms that determine the optimized access sequence and its corresponding instruction schedule resulting in fewer address arithmetic instructions. We have implemented the proposed heuristic algorithms by extending the storage assignment optimization in the SPAM **compiler** back-end targeted for the TMS320C25 DSP. Experimental results with benchmark DSP programs show an average improvements of 3.36% in static code size and considerable improvements in dynamic instruction cycle counts. The average code size reduction over code **compiled** with a naive storage assignment algorithm is 7.04%. (10 Refs)
Subfile: C

27/7/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

5709660 INSPEC Abstract Number: C9711-4210L-013
Title: On explicit substitutions **and** names
Author(s): Ritter, E.; De Paiva, V.
Author Affiliation: Sch. of Comput. Sci., Birmingham Univ., UK
Conference Title: Automata, Languages and Programming. 24th International Colloquium, ICALP'97 Proceedings p.248-58
Editor(s): Degano, P.; Gorrieri, R.; Marchetti-Spaccamela, A.
Publisher: Springer-Verlag, Berlin, Germany
Publication Date: 1997 Country of Publication: Germany xvi+862 pp.
ISBN: 3 540 63165 8 Material Identity Number: XX97-01733
Conference Title: Automata, Languages and Programming. 24th International Colloquium, ICALP '97. Proceedings
Conference Date: 7-11 July 1997 Conference Location: Bologna, Italy
Language: English Document Type: Conference Paper (PA)
Treatment: Theoretical (T)
Abstract: Calculi with explicit substitutions have found widespread acceptance as a basis for abstract machines for functional languages. We

investigate the relations between variants with de Bruijn-numbers, with variable names, with **reduction** based on raw **expressions** and calculi with equational judgements. We show the equivalence between these variants, which is crucial in establishing the correspondence between the semantics of the calculus and its implementations. (15 Refs)

Subfile: C

?

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File 696:DIALOG Telecom. Newsletters 1995-2004/Feb 08
         (c) 2004 The Dialog Corp.
File  15:ABI/Inform(R) 1971-2004/Feb 07
         (c) 2004 ProQuest Info&Learning
File 239:Mathsci 1940-2004/Mar
         (c) 2004 American Mathematical Society
File 484:Periodical Abs Plustext 1986-2004/Feb W1
         (c) 2004 ProQuest
File 813:PR Newswire 1987-1999/Apr 30
         (c) 1999 PR Newswire Association Inc
File 613:PR Newswire 1999-2004/Feb 09
         (c) 2004 PR Newswire Association Inc
File 635:Business Dateline(R) 1985-2004/Feb 07
         (c) 2004 ProQuest Info&Learning
File 810:Business Wire 1986-1999/Feb 28
         (c) 1999 Business Wire
File 610:Business Wire 1999-2004/Feb 09
         (c) 2004 Business Wire.
File 369:New Scientist 1994-2004/Feb W1
         (c) 2004 Reed Business Information Ltd.
File 370:Science 1996-1999/Jul W3
         (c) 1999 AAAS
File  20:Dialog Global Reporter 1997-2004/Feb 09
         (c) 2004 The Dialog Corp.
File 624:McGraw-Hill Publications 1985-2004/Feb 09
         (c) 2004 McGraw-Hill Co. Inc
File 634:San Jose Mercury  Jun 1985-2004/Feb 07
         (c) 2004 San Jose Mercury News
File 647:CMP  Computer Fulltext 1988-2004/Feb W1
         (c) 2004 CMP Media, LLC
File 674:Computer News Fulltext 1989-2004/Feb W1
         (c) 2004 IDG Communications

Set     Items   Description
S1     842612   CHARACTER? ? OR TOKEN? ? OR SUBSTRING? OR SUBSEQUENCE? ?
S2   10632083   PARAMETER? ? OR VARIABLE? ? OR NAME OR NAMES OR FILENAME? ?
             OR NUMBER? ? OR ALPHABET?? ? OR NUMERIC?? ? OR ALPHANUMERIC?
             OR DIGIT? ? OR INTEGER? ?
S3       4061   S1:S2(3N)COMPIL??? ?
S4     359912   S1:S2(3N)(SUBSTITUT? OR REPLAC??? ? OR REPLACEMENT? OR CHA-
             NG??? ? OR ALTERNATIVE? OR SWAP???? ? OR TRANSLAT? OR SHUFFL?-
             ?? ? OR MORPH??? ?)
S5      68483   S1:S2(3N)(CONFIGUR? OR RECONFIGUR? OR ADAPT??? ? OR CONVER-
             T? OR CONVERSION? OR TRANSFORM? OR TRANSMUT? OR TRANSPOS? OR -
             EXCHANG??? ?)
S6      55611   S1:S2(3N)(MODIFIE? ? OR MODIFY? OR MODIFICATION? OR ALTER?-
             ?? ? OR ALTERATION? OR ALTERRING? OR SWITCH??? ? OR EDIT??? ?
             OR REDEFIN? OR REASSIGN?)
S7     496332   EXPRESSION?
S8       3150   S7(3N)(REDN? ? OR REDUC????? ? OR CONDENS??? ? OR COMPACT?
             OR COMPRESS? OR SHRINK? OR DECREAS? OR DECREMENT? OR SHRUNK? -
             OR DIMINISH?)
S9       1114   S7(3N)(TRIM? ? OR TRIMMED OR TRIMMING OR PRUN??? ? OR SHOR-
             T? OR MINIMI?)
S10        27   S3:S6(S)S8:S9
S11    280656   (SINGLE OR ONE OR SOLITARY OR SOLE)(2W)S1:S2
S12         1   S10(S)S11
S13         1   S10 AND (SYNTAX? OR SYNTACT? OR COMPIL???? )
S14        17   AU='BERA, R. K.':AU='BERA, RAJENDRA K.'
S15         1   S14 AND (SYNTAX? OR SYNTACT? OR S3:S6 OR S8:S9 OR COMPIL?)
S16         3   S12:S13 OR S15
```

S17 3 RD (unique items)

17/3,K/1 (Item 1 from file: 239)
DIALOG(R)File 239:Mathsci

02247625 MR 91k#73062
Infinite viscoelastic solid containing distributed instantaneous and continuous heat sources with thermal relaxation.
Mukhopadhyay, B. (Department of Mathematics, Bengal Engineering College, Howrah 711 103, India)
Bera, R. K. (Department of Mathematics, Presidency College, Calcutta 700073, India
(Bera, Rasajit Kumar)
Corporate Source Codes: 6-BENG; 6-CALCP
Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)
Bulletin Mathematique de la Societe des Sciences Mathematiques de la Republique Socialiste de Roumanie. Nouvelle Serie, 1990, 34(82), no. 2, 135--146. ISSN: 0007-4691 CODEN: BMSSB4
Language: English
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (8 lines)
Reviewer: Summary

...Howrah 711 103, India)
Bera, R. K ...
...sources. The solutions are obtained by the use of Laplace transform on time and Fourier **transform** on space **variables** . Since the effects of relaxation time on thermo-viscoelastic interactions are short-lived, wave fronts...
?

```
File   9:Business & Industry(R) Jul/1994-2004/Feb 06
         (c) 2004 Resp. DB Svcs.
File  16:Gale Group PROMT(R) 1990-2004/Feb 09
         (c) 2004 The Gale Group
File  47:Gale Group Magazine DB(TM) 1959-2004/Feb 06
         (c) 2004 The Gale group
File 148:Gale Group Trade & Industry DB 1976-2004/Feb 09
         (c)2004 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2004/Feb 09
         (c) 2004 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2004/Feb 09
         (c) 2004 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2004/Feb 09
         (c) 2004 The Gale Group
File 649:Gale Group Newswire ASAP(TM) 2004/Jan 27
         (c) 2004 The Gale Group

Set     Items   Description
S1     692117   CHARACTER? ? OR TOKEN? ? OR SUBSTRING? OR SUBSEQUENCE? ?
S2    9274889   PARAMETER? ? OR VARIABLE? ? OR NAME OR NAMES OR FILENAME? ?
                 OR NUMBER? ? OR ALPHABET?? ? OR NUMERIC?? ? OR ALPHANUMERIC?
                OR DIGIT? ? OR INTEGER? ?
S3       5006   S1:S2(3N)COMPIL??? ?
S4     369557   S1:S2(3N)(SUBSTITUT? OR REPLAC??? ? OR REPLACEMENT? OR CHA-
                NG??? ? OR ALTERNATIVE? OR SWAP???? ? OR TRANSLAT? OR SHUFFL?-
                ?? ? OR MORPH??? ?)
S5      85566   S1:S2(3N)(CONFIGUR? OR RECONFIGUR? OR ADAPT??? ? OR CONVER-
                T? OR CONVERSION? OR TRANSFORM? OR TRANSMUT? OR TRANSPOS? OR -
                EXCHANG??? ?)
S6      75218   S1:S2(3N)(MODIFIE? ? OR MODIFY? OR MODIFICATION? OR ALTER?-
                ?? ? OR ALTERATION? OR ALTERRING? OR SWITCH??? ? OR EDIT??? ?
                OR REDEFIN? OR REASSIGN?)
S7     387814   EXPRESSION?
S8       3082   S7(3N)(REDN? ? OR REDUC????? ? OR CONDENS??? ? OR COMPACT?
                OR COMPRESS? OR SHRINK? OR DECREAS? OR DECREMENT? OR SHRUNK? -
                OR DIMINISH?)
S9        934   S7(3N)(TRIM? ? OR TRIMMED OR TRIMMING OR PRUN??? ? OR SHOR-
                T? OR MINIMI?)
S10    155554   (SINGLE OR ONE OR SOLITARY OR SOLE)(2W)S1:S2
S11        29   S3:S6(S)S8:S9
S12         1   S10(S)S11
S13         0   AU='BERA R'
S14         4   S11/2000:2004
S15        24   S11 NOT (S14 OR S12)
S16        22   RD (unique items)
S17         2   S16 AND (SYNTAX? OR SYNTACT? OR COMPIL???? )
```

17/3,K/1 (Item 1 from file: 160)

```
DIALOG(R)File 160:Gale Group PROMT(R)
(c) 1999 The Gale Group. All rts. reserv.

00973438
```

Modula-2, the successor to Pascal, features modular design, low-level machine access, and improved syntax **and semantics, according to AW Brown and RE Gleaves, Volition Systems (Del Mar, CA).**

Mini Micro Systems September, 1983 p. 83-1861

Modula-2, the successor to Pascal, features modular design, low-level machine access, and improved syntax **and semantics, according to AW**

Brown and RE Gleaves, Volition Systems (Del Mar, CA).

... contains standard data types and procedures that represent the underlying machine. While Pascal allows type **conversion** only between **character** and integer types, Modula-2 can convert any 2 types if machine representations occupy the same amount of storage. Modula-2's **syntax** and semantics features include constant **expressions** , **shortcut** evaluation of Boolean **expressions** , enhanced control structures, and arrays dimensioned at run time. ...

17/3,K/2 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01247671 SUPPLIER NUMBER: 06996715 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Optimizing the RISC odds. (MIPS Computer Systems' RISC processor, compiler **and operating system) (technical)**
Chow, Fred; Weber, Larry
ESD: The Electronic System Design Magazine, v18, n9, p73(3)
Sept, 1988
DOCUMENT TYPE: technical ISSN: 0893-2565 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2026 LINE COUNT: 00169

Optimizing the RISC odds. (MIPS Computer Systems' RISC processor, compiler **and operating system) (technical)**

...ABSTRACT: processor has relatively fewer hardware requirements as a result of being developed interactively with the **compiler** and operating system. The approach is to reduce clock cycle and execution time and focus more complex operations at the **compiler** level. C, Pascal, Fortran, 77, Ada, PL1 and Cobol programming languages are supported. In the **compiler** , each language is translated in a separate front end and optimized machine code is generated...
... only primitive hardware functions, and does not bundle functionality into complex instructions. Instead, a RISC **compiler** synthesizes complex operations from simpler ones. The RISC architecture allows the **compiler** to optimize below the level of other architectures. Thus, RISC machines provide an interesting challenge for **compiler** writers, since a significant part of machine power relies on a **compiler** 's optimizing abilities. Compared to conventional machines, they provide more areas where the **compiler** can improve performance by optimization. In many cases, the same optimization techniques applied to CISC...

...MIPS RISC processor, the R3000 (Figure 1), was developed interactively with the operating system and **compiler** . Many architectural decisions were made based on special support provided by the **compilers** , resulting in a reduction in hardware requirements that in turn led to shorter instruction execution and clock cycle time. Complexity, in effect, shifted from execution to **compile** time.
A View of the Processor
A simple and uniform instruction set marks the processor...

...alignment.
Six programming languages (C, Pascal, Fortran 77, Ada, PL1, and Cobol) are supported. The **compiler** system has a separate front-end to translate each language and a common back-end...

...level is provided that turns off all optimizations, including ones found

in the most primitive **compilers** . This level is never used in practice.) The next level, global optimization, transforms code within...

...loop-invariant code motion, global common subexpression elimination, the more-general partial redundancy elimination, strength **reduction** for induction **expressions** , linear function test **replacement** , loop induction **variable** , elimination, redundant assignment elimination, and register allocation. These global optimizations require more extensive work to...

...top, the highest levels of optimization provide optimization across procedure and compilation unit boundaries. MIPS **compilers** provide these levels of optimization by linking and entire load module before applying the optimization...

...the program where the source code can be tuned to further increase performance. Also, the **compilers** allow the feedback of the profile information to the **compiler** phases when the program is recompiled, giving the **compiler** more data in performing optimizations. Close interaction between **compiler** design and hardware architecture results in **compiler** -synthesized operations with efficiency that matches and sometimes exceeds their hardware-only implementations. This customized compilation approach could not have been pursued if a third-party, multitargeted **compiler** were used.

Compilation Techniques

Key to machine-specific optimization is instruction scheduling. The MIPS processor is designed to make all processor units visible to software, which allows the **compiler** to emit instructions in an order that utilizes each unit to its maximum efficiency. In...

...branch instructions are delayed operations. Rather than providing expensive scheduling and interlocking in hardware, the **compiler** is relied upon to ensure consistency between instructions. This optimization improves performance by an average...

...execute at the same time.

Procedure call, entry, and return represent an area where the **compiler** must synthesize the proper functionality using the primitive operations provided in hardware. A good design...of the calls require no memory references because they pass four or fewer parameters. The **compiler** divides registers into saved and unsaved registers. The protocol specifies that the callee may freely...

...priority-based global graph-coloring algorithm is used, which often achieves optimal results with reasonable **compile** -time cost. Register allocation helps realize the full benefits of the other global optimizations, since...

...can avoid reuses of the registers already used by the callees. This allows the MIPS **compilers** to make full use of the large and uniform register set provided by the processor.

The MIPS **compiler** provides a procedure integrator that selectively copies procedures in-line at their points of call...

...caller, and the opportunity to customize the procedure body to the caller's environment.

Optimizing **compilers** for the R3000 serve to hide the details of the machine from programmers. The **compilers** not only compensate for the lack of certain functions in the machine, but by doing...

...program that must be ported cannot require substantial changes in order to work. The MIPS **compiler** provides **compile** -time flags that generate

extra code to support unaligned data. Cost is minimized by the...

...Dependence on static data in some Fortran programs is another example of how a proper **compiler** design can aid program portability. Again, this dependence is outlawed by Fortran standards. Many programs...

...the programmer to easily ignore whether the program is dependent on static variable allocation.

MIPS **compilers** also assist in program porting. Assigning optimization levels based on compilation time is consistent with...

...only in late stages of the project. Also, the sophisticated profiling tools found in these **compilers** make it easy for a user to characterize a program's performance. Default encoding of...

...in load modules represents another important feature--this permits some degree of program debugging without **compiling** especially for that ability. All of these features improve the development environment.
CAPTIONS: MIPS R3000 processor architecture. (chart); MIPS R3000 **compiler** system. (chart)

DESCRIPTORS: **Compiler** ;
?

File 347:JAPIO Oct 1976-2003/Oct(Updated 040202)
(c) 2004 JPO & JAPIO
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200409
(c) 2004 Thomson Derwent
File 348:EUROPEAN PATENTS 1978-2004/Jan W05
(c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040205,UT=20040129
(c) 2004 WIPO/Univentio

Set	Items	Description
S1	11	AU='BERA R':AU='BERA R K'
S2	1	AU='BERA RAJENDRA KUMAR'
S3	12	S1:S2
S4	13718	SYNTAX? OR SYNTACT?
S5	1	S3 AND S4
S6	135478	STRING? ? OR SUBSTRING?
S7	3	S3 AND S6
S8	3	S5 OR S7

8/9/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015553351 **Image available**
WPI Acc No: 2003-615506/200358
XRPX Acc No: N03-490108
Checking method for units or dimensions used in computer program, involves replacing function parameters, constants and variables with strings from user-supplied precompiler directives
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: **BERA R K**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6578196	B1	20030610	US 2000589394	A	20000607	200358	B

Priority Applications (No Type Date): US 2000589394 A 20000607
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6578196	B1		11	G06F-009/45	

Abstract (Basic): US 6578196 B1
NOVELTY - A set of user-supplied precompiler directives is added to a computer program to be checked. The functions, function parameters, constants and variables used in the program are replaced with **strings** from precompiler directives. The resulting expressions are reduced based on specific simplifying rules. The reduced expressions are checked for unit or dimensional homogeneity based on predetermined conditions.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for checking unit or dimensional homogeneity in computer program.
USE - For checking correctness and consistency of units and dimensions e.g. meters, seconds, cubic meters, inches, kilograms, meters per seconds, of variables and constants used in algebraic expressions used in computer programs.
ADVANTAGE - Checks the correctness and consistency of units and dimensions of variables and constants used in expressions of computer program effectively.
DESCRIPTION OF DRAWING(S) - The figure shows the flowchart

explaining the unit or dimensional homogeneity checking process.
pp; 11 DwgNo 2A/2
Title Terms: CHECK; METHOD; UNIT; DIMENSION; COMPUTER; PROGRAM; REPLACE; FUNCTION; PARAMETER; CONSTANT; VARIABLE; **STRING** ; USER; SUPPLY; DIRECT
Derwent Class: T01
International Patent Class (Main): G06F-009/45
File Segment: EPI
Manual Codes (EPI/S-X): T01-F05A; T01-J04A; T01-S03

8/9/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013882662 **Image available**
WPI Acc No: 2001-366874/200138
XRPX Acc No: N01-267687
Algebraic expressions equivalence determining method in computer environment, involves comparing strings **that are reduced according to predetermined rule, to detect equivalence of expressions**
Patent Assignee: BERA R K (BERA-I)
Inventor: **BERA R K**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20010003211	A1	20010607	US 2000728096	A	20001201	200138	B

Priority Applications (No Type Date): JP 99341591 A 19991201
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010003211	A1		12	G06F-009/44	

Abstract (Basic): US 20010003211 A1
NOVELTY - The algebraic expressions are recasted into form of token pairs arranged sequentially in a **string** with each token pair comprising an operator followed by an operand. The **strings** are reduced according to set of preset simplifying rules. The reduced **strings** are compared to detect equivalence of two algebraic expressions.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(a) Algebraic expressions equivalence determining apparatus;
(b) Recording medium with algebraic expressions equivalence determining program
USE - For determining equivalence of algebraic expressions for use in compiler optimization of source code, text editor, database management software, etc., in computer environment.
ADVANTAGE - Enables determining whether two algebraic expressions are equivalent or not efficiently by matching respective reduced **strings** of algebraic expressions.
DESCRIPTION OF DRAWING(S) - The figure shows flow diagram of algebraic expressions equivalence determining method.
pp; 12 DwgNo 1/4
Title Terms: ALGEBRA; EXPRESS; EQUIVALENCE; DETERMINE; METHOD; COMPUTER; ENVIRONMENT; COMPARE; **STRING** ; REDUCE; ACCORD; PREDETERMINED; RULE; DETECT; EQUIVALENCE; EXPRESS
Derwent Class: T01
International Patent Class (Main): G06F-009/44
File Segment: EPI
Manual Codes (EPI/S-X): T01-F05A; T01-J20A

8/9/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013882661 **Image available**
WPI Acc No: 2001-366873/200138
XRPX Acc No: N01-267686

Determination of syntactic **correctness of expressions used in computer programs, involves iteratively substituting specific characters in character** string **of expression until expression is reduced to single character**

Patent Assignee: BERA R K (BERA-I)
Inventor: **BERA R K**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20010003210	A1	20010607	US 2000727846	A	20001201	200138	B

Priority Applications (No Type Date): JP 99342659 A 19991201
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010003210	A1		7	G06F-009/44	

Abstract (Basic): US 20010003210 A1

NOVELTY - A **string** of characters is created from the expression. Specific characters included in the **string** and also in predetermined list are iteratively substituted with characters in another list, until the expression is reduced into a single predetermined character. If the expression is reduced into single preset character, the expression is determined to be **syntactically** correct.

DETAILED DESCRIPTION - Character not included in the **string** are substituted with special character from the other list, that causes the iteration to be stopped. An INDEPENDENT CLAIM is also included for computer program product.

USE - For determining **syntactic** correctness of algebraic expression used in computer programs.

ADVANTAGE - Since the metal does not rely upon operator operand tokens, but character combination in the character **string** , the **syntactic** correctness of all type of expressions can be determined.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining **syntactic** correctness determining method.

pp; 7 DwgNo 1/1

Title Terms: DETERMINE; **SYNTACTIC** ; CORRECT; EXPRESS; COMPUTER; PROGRAM; ITERATIVE; SUBSTITUTE; SPECIFIC; CHARACTER; CHARACTER; **STRING** ; EXPRESS; EXPRESS; REDUCE; SINGLE; CHARACTER
Derwent Class: T01
International Patent Class (Main): G06F-009/44
File Segment: EPI
Manual Codes (EPI/S-X): T01-F05A; T01-J20; T01-S01C; T01-S03